Redeeming A Lost Heritage

The Development of the Dixon Springs Agricultural Center

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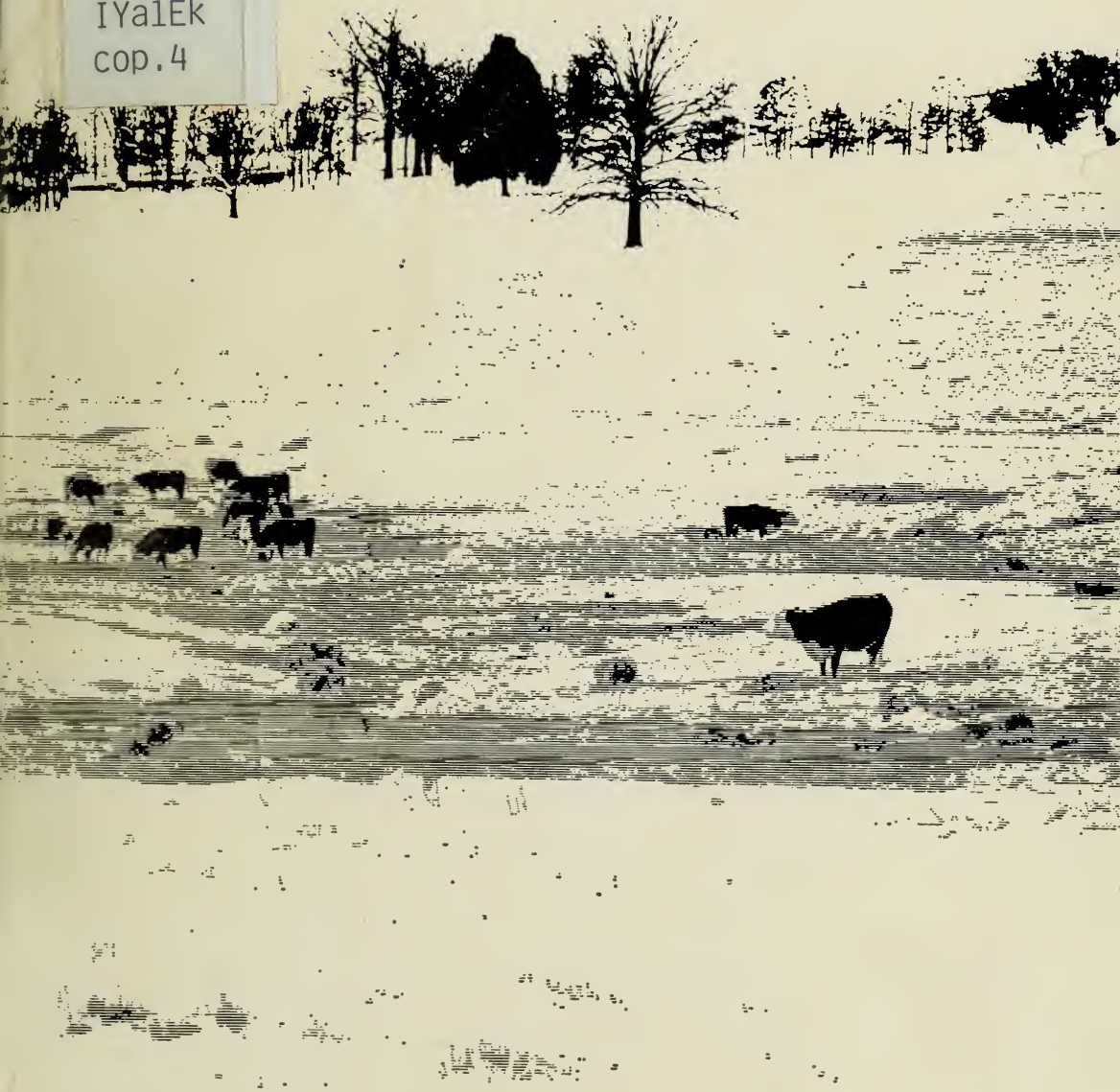

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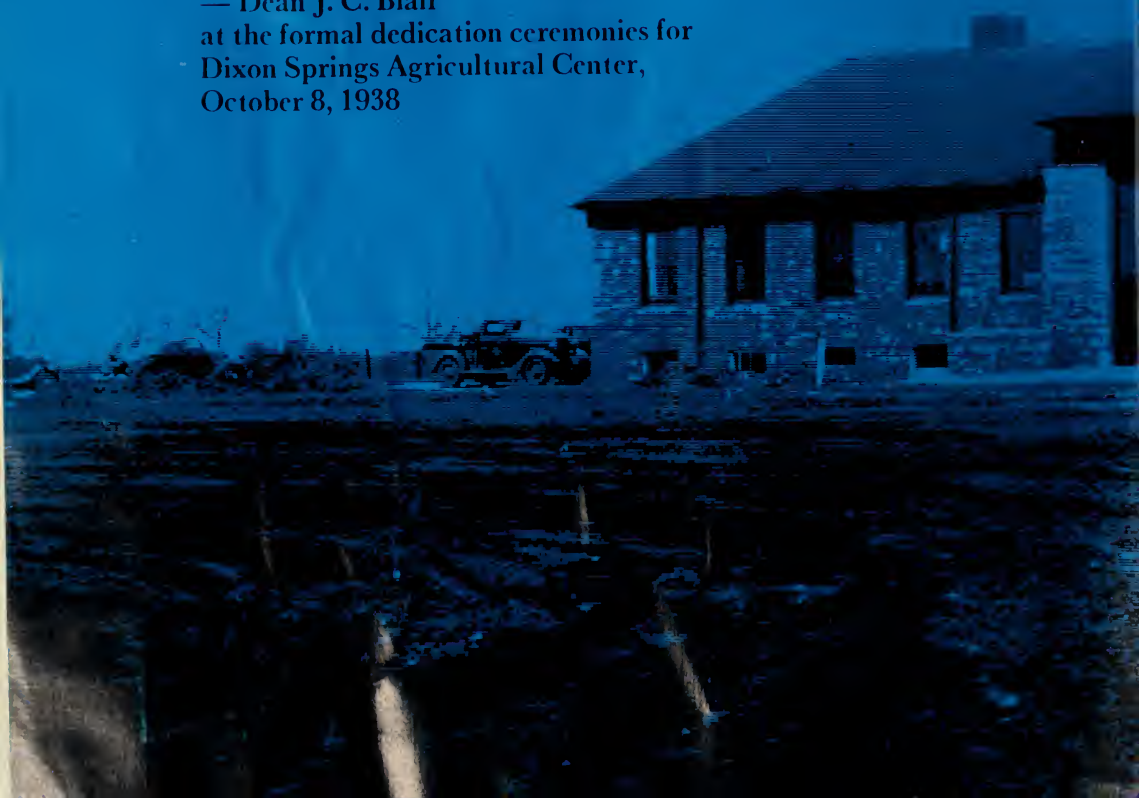
"I have taken the time to remind you of the brave beginnings of Southern Illinois, because while 120 years is a long time when measured by human lives, it is a short time in the making of a state. In fact, we are still a young state, too young to realize, perhaps, that there were once on this hallowed ground stirring events which should, and do, urge us on to still greater achievements. Probably no country had a better assortment of live, forceful, hard-working people than those who cast their lot in Pope County. They made the mistakes of all newly settled areas. There has been waste of land, a robbing of its fertility, there has been a lowering of the water table, due to mistaken practices of drainage and cultivation, and a waste of many other natural resources. It has been said that Nature spent millions of years perfecting her plans, which all too often mankind has upset in the span of a lifetime. Now, once more we have gone to work to redeem our lost heritage and let no one lose heart in this great work as he sets his shoulder to the task."

— Dean J. C. Blair
at the formal dedication ceremonies for
Dixon Springs Agricultural Center,
October 8, 1938



Redeeming A Lost Heritage

The Development of the Dixon Springs Agricultural Center

William G. Kammlade Paul W. Rexroat H. A. Cate

College of Agriculture, University of Illinois at Urbana-Champaign
Agricultural Experiment Station and Cooperative Extension Service

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Foreword

Carved in stone across the front of Davenport Hall, the first major building the people of Illinois built for the College of Agriculture, are the words: "The wealth of Illinois is in her soil, and her strength lies in its intelligent development." The intelligent development of Illinois soil has been one of the guiding principles of the College since 1867, when it came into being as part of the new Illinois Industrial University, later renamed the University of Illinois. A 200-acre experimental farm at Urbana was acquired the same year the University was founded. In 1876, a century ago, the famous Morrow Plots were established on part of the original farm. Later other experimental fields came into use at the Urbana campus in east-central Illinois and in outlying areas of the state, and laboratory work with soil began in order to protect and preserve the highly productive Illinois soil.

But Southern Illinois had not benefitted from the research at Urbana as had the rest of the state. By the early 1930's the agricultural and forest land of the area was depleted, productivity was low, and the economic condition of the people was poor. The problems were large and special to the area. A number of staff members of the University of Illinois came to the conclusion that the parent station in Urbana was too far away to carry on efficiently the large program that would be needed and that an experiment station located on the poorly managed soils would help restore productivity and prosperity to that part of the state and also to large portions of neighboring states.

William G. Kammlade, a member of the Animal Husbandry Department in the early 1930's, was one of those who led the drive for a station in Southern Illinois. Dean H. W. Mumford, W. L. Burlison, head of the Department of Agronomy, and H. P. Rusk, head of the Animal Husbandry Department (later dean of the College) were also involved.

Their activities led in a few years to the establishment of the Dixon Springs Experiment Station (later renamed the Dixon Springs Agricultural Center), but they did not do it alone. The Center would not

have been possible without the cooperation of the people of the area, the cooperation of the federal government (the U.S. Forest Service) as owner of the land, and cooperation of a land-grant university, the University of Illinois, as administrator of the research and educational programs.

The story of the Center is the subject of this book. The idea of such a book arose after we learned of the existence of reminiscences written by Dr. Kammlade in 1962 that dealt with the first 25 years of work at the Center. Dr. Kammlade's narrative, "Sassafras and Persimmons," makes up the middle section of this book. It has been supplemented with other information to give more of the early background of Southern Illinois and to bring the report up to date.

The first exploratory venture into Southern Illinois opens Dr. Kammlade's account. His enthusiasm and his hopes for the new venture come through bright and clear. His interest in the rural life of Southern Illinois is contagious, as is his belief in the capacity of scientists and extension personnel to use research, demonstrations, and extension teaching to bring people information that they would use to improve their lot.

How the Center grew out of the geographic, economic, and political history of the area is the subject of the first section of the book, "Before the Beginning," written by Dr. Paul W. Rexroat while he was a publications editor in the College of Agriculture. The third section, "The Heritage Redeemed," assesses the Center's accomplishments, and was written by H. A. (Bob) Cate, Communications Specialist at the Center since 1949. The book was edited by Adrian W. Janes, head of the Office of Agricultural Publications. I am deeply grateful to him and his staff and to Carolyn G. Evans, an artist in the Office of Agricultural Communications, for making a coherent and attractive book out of diverse contributions. The index was prepared by Jean Koch and Sarojini Balachandran of the University of Illinois Library.

This book is a tribute to the many who have had a hand in the development of the Center and have added to the story of its accomplishments. Most of the scientists conducting research there have been members of departments at the University of Illinois in the Colleges of Agriculture and Veterinary Medicine. Some of them have been permanently stationed at the Center. The remainder of the Center staff, the nonacademic employees, have all been residents of the area. The University and the College of Agriculture are especially grateful for the contributions of Robert J. Webb, Superintendent of the Dixon Springs Agricultural Center and Assistant Director of the Illinois Agricultural Experiment Station, who was the on-the-grounds, day-to-day

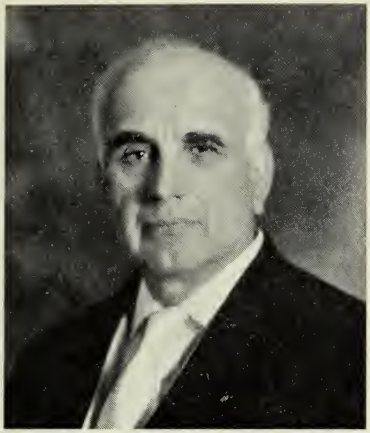
leader of the Center from 1941 to 1972. All of us at the Urbana-Champaign campus of the University of Illinois join in dedicating this volume to the staff of the Dixon Springs Agricultural Center past, present, and future.

Today we can see the results of 40 years of research and education at the Station in acre after hilly acre of once-eroded farmland now flourishing with corn, soybeans, pastures, and livestock. We can see a renewed productivity of the land and a prosperity of the people which must be credited in part to the Center's innovations in agriculture. The Center's success has helped to revitalize thousands of square miles of land in nearby areas. The Center will continue to be a model for others in the 20th-century struggle to renew our planet. It takes little imagination to recognize what would result from the continued depletion of the world's land resources in the face of human population expansion if lessons learned at Dixon Springs and stations like it are not applied throughout the world.

The Dixon Springs story is just one of many stories that could be told of great public benefits generated from the work of state agricultural experiment stations and the colleges with which they were associated. These experiment stations have been serving the people of their states and the nation as a whole for more than a century — "the first hundred years of forever." Now we need to turn to the future and trust that as population expands, there will continue to be concerned people who will dedicate themselves to research and to teaching others about the most basic resource that mankind has for maintaining itself on earth — the soil.

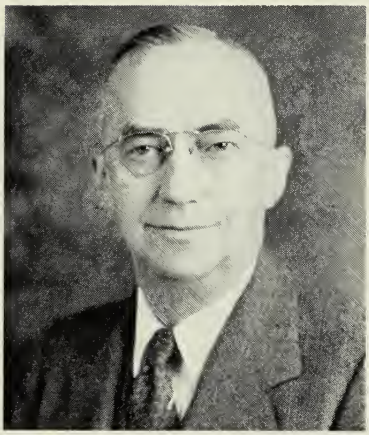
G. W. Salisbury, Director
Illinois Agricultural Experiment Station

Some of the photographs of the area in the early 1930's were taken by the various federal agencies. The rest are from College of Agriculture files.



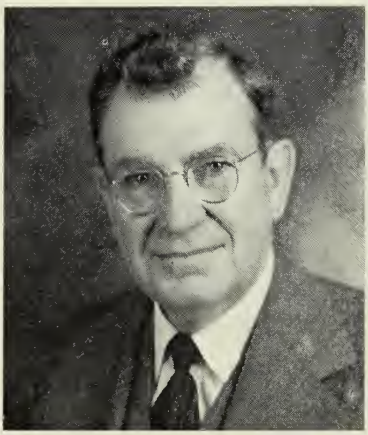
Dean J. C. Blair

Professor W. L. Burlison



Professor W. G. Kammlade

Dean H. W. Mumford



Dean H. P. Rusk

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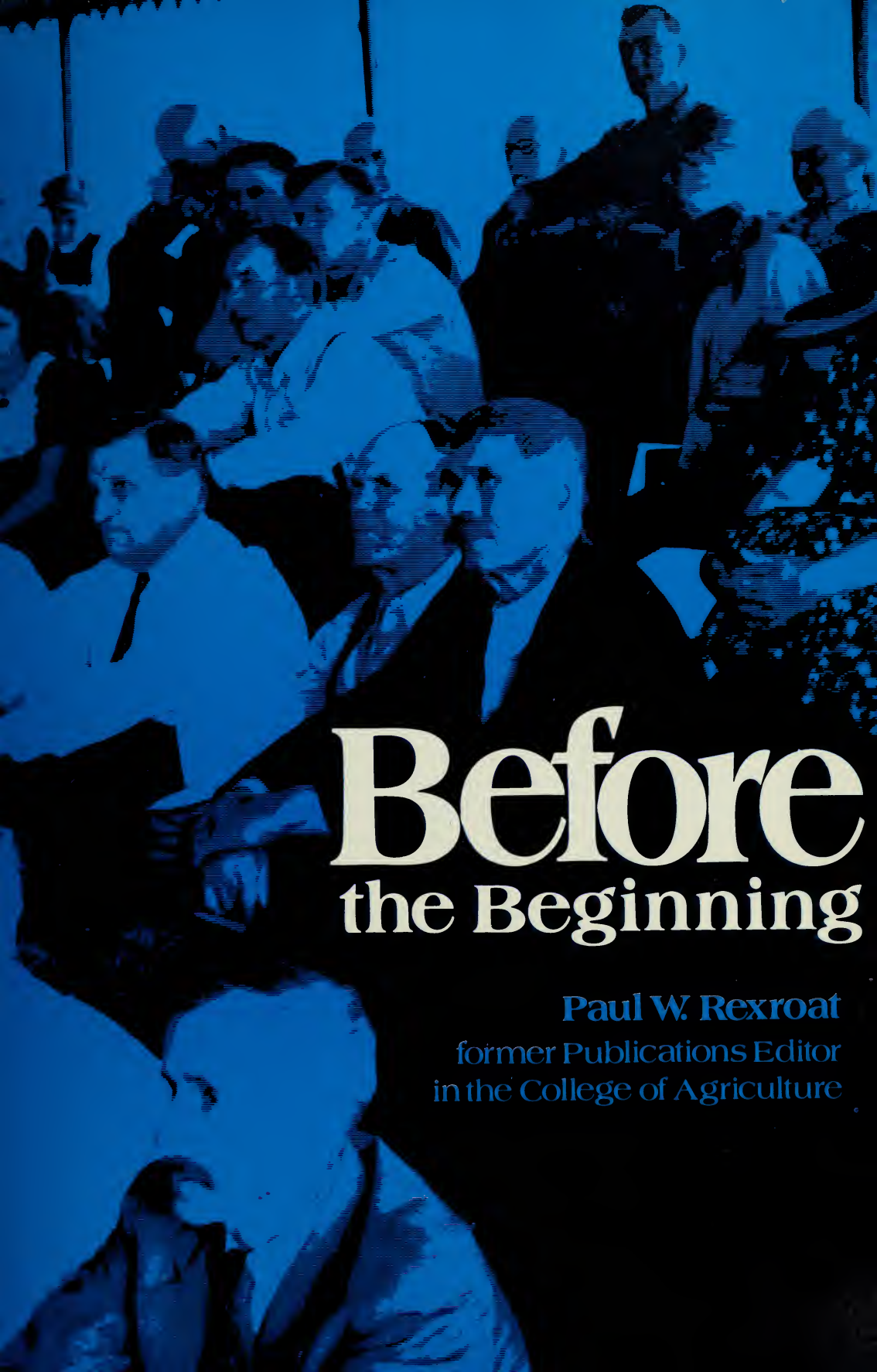


Before the Beginning

Paul W. Rexroat
former Publications Editor
in the College of Agriculture

Preface

This portion of the story of the Dixon Springs Agricultural Center, formerly called the Dixon Springs Experiment Station, presents historical and other background for Professor Kammlade's account, "Sassafras and Persimmons," which tells about the first quarter-century of the Station.

The most interesting part of my assignment was discovering the interrelationships of historical factors, geological factors, 1930 social conditions in Southern Illinois, and political developments at the national level. The most difficult part, surprisingly enough, was tracing the administrative decisions and actions in the College of Agriculture from the original proposals to the dedication ceremony. I had expected the documentation to be more complete and systematic than it was. One wonders whether people with similar assignments 40 or 50 years from now will have the same difficulty. Perhaps major units of the University should allocate a portion of time to regularly record "current history." On the other hand, if such detailed information had been available for the past 40 years, perhaps Professor Kammlade would have felt the record was adequate, and would not have set down his colorful and interesting story.

Many people in the College of Agriculture and in other parts of the University helped me to gather the information I needed. I particularly want to thank Maynard Brichford, University Archivist, and Robert M. Sutton, Director of the Illinois Historical Survey. Sources of some of the information are given in footnotes throughout the section.

Since this represents my last major project in the College of Agriculture, I want to add a personal note of appreciation to the administration of the College and to those with whom I worked during the past ten years.
— *Paul W. Rexroat*

Exploring the Roots

The roots of the Dixon Springs Agricultural Center should not be examined only in terms of the agricultural and economic conditions immediately preceding the institution's establishment. Nor does study of the New Deal laws which provided land, money, and labor for the Center's establishment explain thoroughly the need for a unique scientific institution in the midst of a unique setting. One must also study the geology and the political and social history of Southern Illinois, or "Egypt" as it has been known for the past 150 years. These factors give the region a distinct character which is not duplicated in any other part of Illinois.

Civilization in the Northwest Territories originated in Southern Illinois. The geology of the area, the limited agricultural knowledge of the early settlers, and limited resources forced a particular pattern of settlement on the early settlers. Worldwide political ambitions and strategies left the marks of the Spanish, French, and British on a region already inhabited by the American Indian, who has clearly left his imprint on the area. Such names as Shawneetown, Kaskaskia, Okawville, Prairie du Rocher, and Beaucoup reflect some of the native and foreign cultural influences. The names Cairo and Karnak provide hints as to the origin of the nickname "Egypt." The names Equality and New Liberty provide insight into the political desires of the early settlers.

Thus the roots of the Dixon Springs Agricultural Center extend not only through the soils of the area, but also through the social and political character of inhabitants of the region from the earliest times.

Geology of Southern Illinois

The present topography of most of Illinois is the result of extensive glaciation.[1] It was only 25,000 years ago that the last of the great glaciers moved across much of Illinois. It receded about 12,000 years

[1] Federal Writers' Project. *Illinois* (American Guide Series). 2d ed., pp. 9-12, 1973. Somerset Publishers, Chicago. (Compiled and written by the Federal Writers' Project of the Works Progress Administration for the State of Illinois.)

ago, having covered 90 percent of the state's surface. Only Jo Daviess County in the northwest corner of the state, Calhoun County in the west-central region, and the seven southernmost counties had been unglaciated. This last glacier, and the three other glaciers which are known to have reached Illinois, left a variety of materials behind them. One of the most important of these materials is called loess — a fine glacial drift material, generally deposited by wind and ranging in composition from clay at one extreme to fine sand at the other. Loess was deposited over all of the glaciated areas, and has been moved by wind onto the unglaciated areas of Illinois.

The rock strata of Illinois are buried beneath the glacial drift. They have little influence on the glacial drift, but do contain minerals which make Illinois one of the leading states in mineral production. The Paleozoic era, which began 600 million years ago, is the most important geologically and economically. During the various periods of this era, Illinois was covered by vast, shallow seas. In a series of long cycles, these seas would cover the land for millions of years, then recede. Left behind would be a stratum of sedimentary materials which would be weathered and eroded. These sedimentary strata differ from one another, depending on the nature of the shorelines and the depth of the seas.

The Cambrian is the oldest of the Paleozoic era periods. During the Cambrian period, thick layers of dolomite and sandstone were deposited over the whole state, although none of these layers outcrops in Illinois. The second period was the Ordovician which left behind various strata of limestone and sandstone. The Silurian period deposited strata of dolomite and limestone. The Devonian period was also important for its limestone. The Mississippian period is important for its strata which hold the southeastern Illinois oil pool. Illinois's huge coal deposits were left behind by the Pennsylvanian period. The land during the Pennsylvanian period was low and marshy — only a few feet above sea level. This was a favorable climate for the growth of large trees and ferns that over the years were pressed into the coal veins that underlie two-thirds of the state. After three-quarters of a century of extensive mining operations, only a minute amount of this coal has been removed.

After the Pennsylvanian period most of Illinois remained above sea level. It was then that much of Southern Illinois took on its present topography when great land movements folded the land in that area into the present Ozark Mountain range. This area was then eroded and creased with great valleys and ridges. Then came a great climatic change when snow began to fall in the northern regions. Each year

more and more snow fell until far more had accumulated at winter's end than the brief summer could melt. This was the beginning of the glacial period. This was the period — very recent in geological terms, ending only 12,000 years ago — which gave Illinois much of the face it now bears.

Thus by about 10,000 B.C. nature had completed most of her massive changes on the area that now surrounds the Dixon Springs Agricultural Center. The topography varies from nearly level land to rough and broken country. As a result, only about 10 percent of the area in Pope County is suitable for row crops, 40 percent should be used for forage crops, with much of the rest suitable only for forestry uses.[2] Although these figures vary considerably from one area of Southern Illinois to another, it is apparent that much of the land should not be used for row crop production. Even those soils that can be used to produce row crops have low fertility and are subject to erosion.

Primitive Man

During one of the last two glacial periods — some 25,000 to 50,000 years ago — the lowering of the sea level created a land bridge between Siberia and Alaska. During this time primitive hunters first came to North America following herds of mammoth, mastodon, or prehistoric giant bison. These primitive men are known as the Paleo-Indians. Carrying little with them except weapons and hides, they followed their prey south along rivers created by the melting glaciers.[3]

Archeological evidence indicates that these early men were definitely in the Southern Illinois area around 8000 B.C. or earlier. They must have led a totally nomadic life until the last of the glaciers began to recede. The warming climate would have encouraged vegetative growth and stabilized the animal populations. As animal populations stabilized and became a more reliable food source, and as increasing vegetation made more food available, the early men became less nomadic. Archeological excavations at a prehistoric campsite under an

[2] U.S. Department of Agriculture, Soil Conservation Service. Report of the Dixon Springs Project received in the office of the Dean of the College of Agriculture on January 17, 1941. U. of I. Archives, Record Series 8/1/2, Box 109.

[3] The sources of much of the material in this section are:

Ed Hasse. *Southern Illinois.* Pp. 7-8. Southern Illinois University Communications Media Services Division. 1966.

Betty I. Madden. *Arts, Crafts, and Architecture in Early Illinois.* Pp. 7-14. University of Illinois Press. 1974.

overhanging bluff of the Mississippi River near Modoc, Illinois, indicate that early Indians used the site on a seasonal basis from about 8000 to 2000 B.C.

Some of the first farming on the North American continent may have been done by the primitive Indians in Southern Illinois around 3000 B.C. The climate had become ideal for the growth of vegetative matter, and the inhabitants of the area began tilling the soil and cultivating a variety of plants, in addition to foraging for roots, nuts, berries, and fruits. This gradual change in habits from hunting and gathering to a more settled life marks the introduction of the Woodland culture, which lasted until about 500 B.C. This culture flourished throughout the eastern half of the United States and saw the development of many large Indian population centers.

By the time of the birth of Christ, the Woodland culture was declining, and a new culture — the Middle-Mississippian culture — began to establish itself along the Mississippi River about 30 miles south of the present city of Alton, Illinois. The population center of this new culture was Cahokia, where several thousands of Indians lived at about 1000 A.D. These Indians are famous as the builders of hundreds of burial mounds. The Indians in this area apparently raised corn, beans, and squash to supplement their diets of small game, fish, and shellfish. These Indians also established the first "industries" in Southern Illinois, as they set up workshops to manufacture tools and weapons with materials taken from large flint deposits in Union County north of Cairo. They used the clays in the area to make pots and jars to store the products of their agriculture. They apparently manufactured salt from springs in Gallatin County (after the arrival of the white man, this area was, for a time, the largest producer of salt in America). Another Southern Illinois mineral — fluorspar — which is mined extensively today in Hardin County was used by Indians for ornaments.

The Mississippian Indians became extinct sometime shortly after 1500 A.D. There is no direct evidence to indicate why this happened, but it is probable that it was caused by such diseases as smallpox and measles. It is known that Hernando de Soto led an expedition from Florida to the Mississippi River from 1540 to 1542. Along the way his band brought measles and smallpox to the Indians. Migrating bands of Indians spread these diseases throughout the continent, wiping out families, villages, and entire tribes.

When the white man arrived in the Southern Illinois area, the small bands of Indians they encountered were members of a confederation known as the Illiniwek, meaning superior men. The six tribes in the confederation were the Cahokia, Michigamea, Kaskaskia, Peoria,

Moingwena, and Tamoroa. These tribes mainly inhabited areas along the Illinois and Mississippi Rivers. Also located in Southern Illinois were the Miami, who lived along the Ohio in the northeastern section of Southern Illinois, and the Shawnee, who occupied the southeast.

The French and British in Illinois

The first white men to traverse what is now Illinois were Father Jacques Marquette, a Jesuit priest, and Louis Joliet in 1673. Their most important discovery was that the Mississippi River flowed into the Gulf of Mexico rather than the Pacific Ocean. In 1679 La Salle and Tonti made their first journey to Illinois, and in early 1680 erected Fort Creve Coeur on the Illinois River near what is now Peoria. In 1681 and 1682 La Salle and Tonti undertook their greatest voyage. They traveled all the way down the Mississippi to its mouth where they claimed for France all of the Mississippi Valley and all of its tributary valleys.

The most stable area of French settlement in the central portion of the Mississippi River Valley was in the Southern Illinois area. In 1699 the Mission of the Holy Family was established by priests of the Seminary of Quebec. This mission was located at Cahokia just south of the present city of East St. Louis. Four years later, in 1703, the Jesuits established a mission at Kaskaskia. For the next two-thirds of a century, these outposts were the main bastions of French power in the Illinois region. The French and Indian War began in 1754 because of conflicting claims of the British and the French in the upper Ohio Valley. It was formally ended by the Treaty of Paris in 1763. France ceded to Great Britain all of Canada and all of her claims to territory east of the Mississippi. This assured that the Illinois region would be settled by English-speaking people.

Even with the defeat of the French in North America, the British never were able to gain any sort of useful foothold in Illinois. Indian uprisings in the two years following the Treaty of Paris prevented the British from bringing troops into Illinois to take over the French forts. Finally, in 1765, Fort de Chartres near Kaskaskia was turned over to the British. During the next 13 years of British occupation of the area, about one-third of the population moved across the Mississippi River to live under French rule.

From Revolution to Statehood

The entire Illinois region — and probably the entire old Northwest Territory — was taken from the British by one brave American officer who never had more than 200 men at his command.[4] At the start of the Revolutionary War, George Rogers Clark was already respected as an explorer and surveyor, as well as for his ability as a military leader. He obtained approval in 1777 for his plan to lead a small force against the British in the Illinois country. Landing in Illinois at Fort Massac in 1778, Clark and his men marched overland across Southern Illinois to Kaskaskia, which had been left unguarded by the British. Within a short time, the inhabitants of Cahokia, Prairie du Rocher, and Vincennes capitulated to Clark's men. In October of 1778 the British recaptured Vincennes, which Clark had left with only a small guard force. In spite of terrible winter weather, Clark marched his 170 men east across Southern Illinois, and in February of 1779 the British force at Vincennes surrendered to Clark. Clark and his small force held the area for the rest of the Revolutionary War. As a result of the daring efforts of Clark and his men, the West — as far as the Mississippi — was in American hands. Thus the Treaty of Paris, which ended the Revolutionary War in 1783, formally recognized American control of the West.

Illinois was a county of Virginia from 1779 through 1782. In 1782 Virginia leaders decided to cede Illinois to the federal government. This was accomplished in 1784. In 1787 the Congress passed "An Act for the Government of the United States Territory Northwest of the Ohio River." This was the famous Ordinance of 1787, which described the steps to statehood. The Northwest Territory advanced to the second stage of territorial government in 1798, and on May 7, 1800, Congress created the territory of Indiana, which included the present state of Illinois. Illinois had a population of 10,000 by 1808, and this more than qualified it for territorial status, which was conferred on February 3, 1809. The present state of Wisconsin was included in the Illinois Territory. By 1812 Illinois was advanced to the second stage of ter-

[4] The sources of much of the material in this section are:

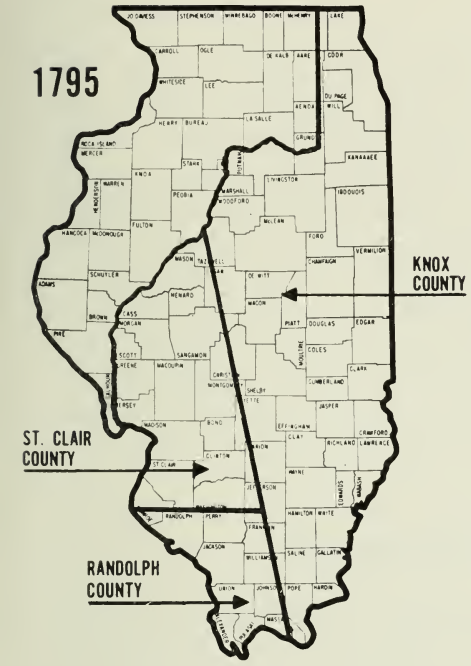
Secretary of State. *Counties of Illinois*. 1950.

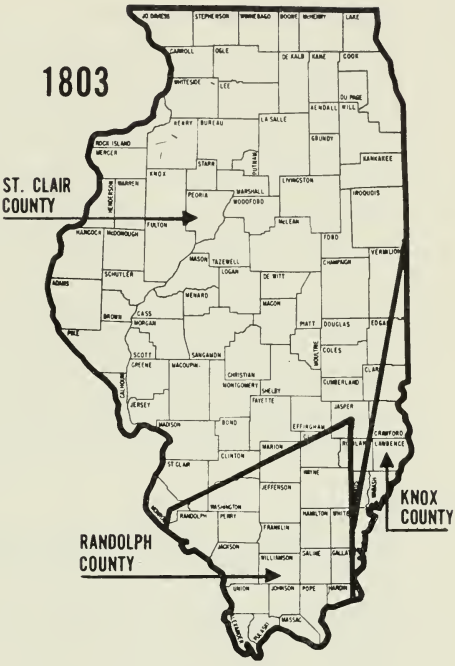
G. W. Smith. *A History of Southern Illinois*. Vol. I. Lewis Publishing Co., Chicago. 1912.

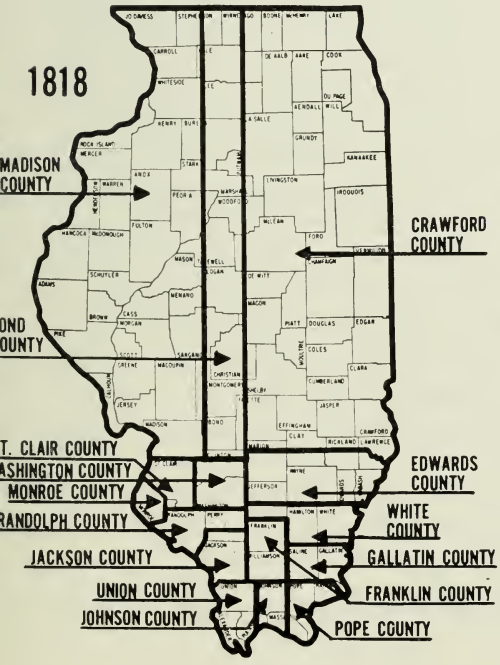
T. C. Pease. *The Story of Illinois*. The University of Chicago Press, 3d ed., 1965.

See also sources cited in footnote 3.

The Development of Counties in Illinois







ritorial government, and five years later a campaign for statehood was begun.[5]

Nathanial Pope, the territorial delegate to Congress, introduced a statehood enabling act on April 18, 1818. Under the enabling act, Illinois adopted a constitution on August 26, 1818, and Congress admitted the new state to the Union on December 3, 1818. Showing great foresight, in introducing his statehood enabling act Pope included in it a clause which moved the northern boundary of the state from parallel with the southern tip of Lake Michigan to its present location. It is not clear whether Pope only wanted to make certain Illinois would have access to the Great Lakes, or whether he suspected that this northeastern section of the state might eventually become a major population and business center. At any rate, had it not been for Pope's foresight, Illinois would have lost half of its present population.

Settlement in Southern Illinois

By the time Illinois became the twenty-first state, its population had reached 35,000, most of whom were living in Southern Illinois. Following the Revolutionary War, the French settlers in Southern Illinois began to share the area with a few American frontiersmen. Most of the population lived in stockaded stations, and only enough farming was done to feed the small population. The population of Illinois was only about 2,500 by 1800 — about evenly divided between French and Americans. By 1812 the population of Illinois and the present Wisconsin had risen to about 12,300.[6] Slow evolution of the federal government's machinery for disposing of public lands was a major cause of the slow increase in population. The average frontiersman found it difficult to purchase land under the terms of the Act of 1796, since the smallest plot that could be purchased (at $2 an acre) was a section of 640 acres. By 1800 the law permitted purchase of 320-acre tracts with credit extending over four years. In 1804 it was possible to buy public lands in 160-acre tracts. Even the liberalization of the land-purchase laws could not speed land settlement in some areas of Illinois because of the multitude of conflicting claims to much of the land. It was not until 1810 that Congress settled the conflicting land claims, and authorized the survey of townships and the sale of quarter-sections at the Shawneetown and Kaskaskia land offices.

[5] Secretary of State. *Illinois Counties*. 1950.

[6] Pease. Op. cit. (See page 70 and following for detailed discussions of the subjects considered in this section.)

Those who settled in Illinois before 1818 had, for the most part, come from North Carolina, Tennessee, Virginia, Kentucky, Maryland, Pennsylvania, New York, and New England. The Ohio River was the main route to Southern Illinois, and Shawneetown was the main port of entry. These early settlers drifted down the Ohio River on flatboats large enough to hold their horses and cattle. Later settlers traveled in keelboats and steamboats. When the Cumberland Road was completed, settlers followed it from Wheeling across Ohio and Indiana, and on to Illinois.

The first to arrive before the main tide of settlement were the "loners." These were the men who simply wished to live on their own in the wilderness. Then came the "squatters," who stopped for only a short while to build a cabin, to clear enough land to plant the corn that would supplement the diet supplied by their rifles, and then to move on after selling the improvements to a more permanent settler. Frequently the squatter was cursed by a poverty that never permitted him to buy his own land, but sometimes a fortunate sale of his improvements or the opportunity for him to be paid good wages by a wealthy landowner would enable him to enter a tract of land and become a stable resident of a community.

Following the squatter into Southern Illinois was the farmer, who became the mainstay of the small communities. These farmers owned stock or capital and would not settle on any land except that which they owned or were certain they could buy. The farmer's living arrangements were crude. During his first year on the land he might be sheltered only by piles of logs on three sides, with an open fire blazing during the night to provide a little warmth. This crude arrangement would be quickly succeeded by a one-room or two-room log cabin with puncheoned floors, chinked walls, and, eventually, workable doors and windows. His most important possessions, other than his horses and cattle, were his rifle, spinning wheel, wool cards, and heavy plow.

Trading hamlets in Southern Illinois frequently arose at the sites of waterfalls. There millwrights would build a gristmill or sawmill, using a dozen different types of native wood, each suited to a particular use in construction. Such mills were important to local farmers as places where products and news could be traded.

Although these early farmers were stable and willing to work on land they thought they would be able to purchase, gaining the actual ownership of land was no easy thing. Beginning in 1812, farmers and speculators could purchase land at the government land offices in Shawneetown, Kaskaskia, and Edwardsville at the minimum rate of

$2 an acre in tracts of 160 acres. The government allowed the farmers to pay one-fourth of this amount as a down-payment, and the rest in payments extending over four years. The plan was for farmers to use their first four crops to pay off the land. Unfortunately, many farmers were unable to do this. As a result, Southern Illinois contained large numbers of farmers in debt to the government. They could not pay off their debts, and they were too numerous to be dispossessed. To resolve this problem, in 1820 Congress abolished the whole credit system and arranged for cash sales of land for $1.25 an acre after the land had been offered for sale at auction. In addition, Congress passed a series of relief acts which enabled farmers who were in debt to the government to settle these debts by taking title to an amount of land equivalent to payments already made.

Naturally, the need for nature's resources determined to a great extent the pattern of land purchase and settlement. Probably the major resource needed by a farmer on unimproved land was timber. With a free supply of timber, a man could construct a home and other buildings and could split rails needed to fence in his livestock. Thus the original settlers in Southern Illinois ignored the broad prairies and selected the timbered uplands for their rich resource of hard wood. Another reason for this pattern of land selection was the simple fact that a man could accomplish more on timbered lands than on prairie lands. It cost a man nothing to cut timber on his own land and then obtain help from his neighbors in logrolling, girdling trees, and planting corn among the rotting stumps. On the other hand, a farmer who located on the prairies would either have to steal the lumber he needed (from government lands or from unoccupied purchased land) or buy it. In addition, breaking the tough prairie sod cost several dollars an acre if he did not have a team of oxen. Even with the aid of oxen, settlement of prairie lands proceeded slowly until the self-cleaning steel plow was developed. This picture was complicated even further by wealthy speculators who located and purchased timbered lands along water courses wherever possible. These speculators — many of whom accumulated great wealth and became leaders in the state — knew that settlers would have to purchase the lands from them at inflated prices.

From about 1820 to 1830, very few farmers actually purchased land in Southern Illinois. The reason for this was explained in a report written in 1828 by William Lee D. Ewing, the receiver of the Vandalia Land District.[7] He wrote:

[7] *American State Papers, Public Lands,* V, 556.

The citizens of this country are all aware of the discussions that have been had in Congress on the subject of the reduction of the price of those lands. They believe (which is very natural for them to do) that the price should be reduced; and finding, too, that they are supported in this opinion by many of our most enlightened legislators, and believing that efforts will again and again be made until the object be either effected or totally defeated, they will not enter their lands, except in particular instances where places are found to possess some peculiar advantages; but will continue (as they have long done) to cultivate a still stronger faith in an understanding among themselves not to enter each other's improvements, nor to let any one else do it, until government affords them some relief in the shape of the reduction of the price of its lands. . . . In the county of Clay there are about one hundred voting inhabitants, of whom there are not more than twenty freeholders.

The farmers in Southern Illinois, and elsewhere throughout the West, strongly believed in the land policy advocated by Senator Thomas Hart Benton of Missouri. This policy was known as "graduation" and called for a year-by-year reduction in the price of unsold government lands. When the price reached 25¢ an acre, the remaining unsold lands would be sold at public auction. In addition, "graduation" would be accompanied by the right of actual settlers to preemption. That is, actual settlers could purchase the lands on which they had been living for the minimum price. Due to the resistance of the eastern states to the settlement of the West, it was twenty years (following 1830) before the right of preemption was granted by the government, another ten years before the graduation principle was applied to government lands, and another ten years before outright homesteading was permitted.

Social Conditions in Pioneer Times

Life for Southern Illinois settlers in the early and middle 1800's was not very romantic. Government had little effect on individuals. The state legislature met every two years, but did little to meet the needs of individuals throughout the state. There were three or four administrative officials at the state level, who had little effective authority, and there was a Supreme Court. Individuals were likely to be most affected by county government. County commissioners' courts managed local finances; probate and circuit courts and justices of the peace administered justice; and sheriffs tried to keep the law. Town governments were rudimentary and ineffective. Police forces did not exist.

Whatever laws were enforced usually had to be enforced by the local residents themselves. The law of the vigilante was employed sporadically. Sometimes vigilante law got out of hand. For instance, the famous war between the Regulators and Flatheads (1843-1850) took place in Southern Illinois. The center of the activity was in Pope County. Originally the Regulators were law abiding, reacting to a long series of crimes for which few arrests had been made, and the Flatheads were criminals. But as some Regulators began to use the organization to persecute some personal enemies, citizens began to join the Flatheads. For a few years sporadic incidences of open warfare occurred in the area. Historian James A. Rose has suggested that "Perhaps no section of the country has undergone a greater reign of terror than that found in Massac County from about 1843 to about 1850."[8]

The Southern Illinois frontier tended to be a somewhat lonely place. Certain events drew the residents of an area together. Tradition has it that a neighborhood celebration would follow the corn-husking, the logrolling, and the cabin-raising. Local folk came together occasionally for wedding celebrations and dances. Other gatherings were the result of more formal duties. The regular meeting of the circuit court would draw people to the county seat. While there the local residents would learn news of the outside world and hear political speeches from the judges and lawyers who rode the circuit. Occasional meetings of the militia also brought people together.

Life in Southern Illinois and elsewhere in the frontier period was frequently rather unpleasant. Illness was a major problem throughout the area. Ill health was so rampant in the Illinois area during the 1840's and 1850's that one writer used the phrase "a valley of shadows" to describe the spirit of the times in Illinois. Sickness and early death hung over the lives of the people. Nonetheless, these early settlers had conquered the wilderness. They took enormous pride in their little farms, in their independence, and in their young state and nation.

Although the slavery issue was a major one in Illinois politics in the first half of the 1800's, there was never much slavery in the state. John W. Allen has cited the history of slavery and Negro servitude in Pope County as being typical of that found in most of the older Southern Illinois counties.[9] His research shows that the first four deed books of Pope County contain many recordings concerning Negro slaves and servants. Records show that the practice of slavery and Negro servi-

[8] J. A. Rose. The Regulators and the Flatheads in Southern Illinois. *Transactions of the Illinois State Historical Society* 11:109-113, 1909.

[9] J. W. Allen. Slavery and Negro Servitude in Pope County, Illinois. *Journal of the Illinois State Historical Society* 42:411-23, 1949.

tude in Pope County did not conform to the statutes enacted for their regulation. It is apparent that public officials knew of the inconsistencies and actually participated in the evasions.

The first Negro slaves were brought into Southern Illinois from Santo Domingo around 1720. Some Indians were also held in bondage. The *Jesuit Relations,*[10] records of missions established by the religious order, show only 300 Negro and 60 Indian slaves in Illinois in 1750. The Ordinance of 1787 provided that there be no slavery or involuntary servitude in the territory of which Southern Illinois was a part. However, this law was evaded by the indenturing of Negroes brought in after the ban had been imposed. The Illinois Constitution of 1818 had a provision forbidding slavery, but it did not specifically abolish slavery that was already in existence. Thus, indenturing could continue, but it was legal to indenture a servant for only one year.

The first entry in a Pope County deed book concerning a Negro servant was a document filed on June 26, 1816, about six months after the new county had been formed. Pope County records also reveal the outright sale of slaves in the area, as well as the legal emancipation of slaves. Records indicate that the last date on which a slave was freed in Pope County was December 28, 1847. No doubt some slaves were held in Pope County after 1847, but no direct evidence can be found.

First Farms in Southern Illinois

By 1800, Southern Illinois was the farthest outreach of the American frontier. A few of these people were polished gentlefolk, but the majority were simple, rough-and-ready pioneer families who had come west looking for an area where every man was equal and where they could find their own little piece of land on which to start a new existence. Each man had to build his own buildings, make his own furniture, tan his own leather goods, break his own land, and hunt and butcher his own food. Each woman had to preserve foods and manufacture clothing, bedding, soap, and dyes from the raw materials found or produced on her own farm. The typical farm family arrived in Southern Illinois in the late 1700's and early 1800's with only the bare essentials: some tools, a gun, iron kitchen utensils, a spinning wheel, a

[10] R. G. Thwaites, ed. *The Jesuit Relations and Allied Documents: Travels and Explorations of the Jesuit Missionaries in New France, 1610-1791.* 73 vols. Burrows Brothers, Cleveland. 1896-1901.

loom, and some clothing and blankets. It also had seeds for the crops that would produce both food and raw materials for the family's clothing. The early Southern Illinois farmer was faced with an immediate dual challenge — he had to clear enough land to get a crop started that would provide food over the winter, and he had to see to his family's needs for shelter.

The earliest farmers raised mainly corn, vegetables, and fruits — crops that could be eaten. However, farming in the Southern Illinois area was soon influenced by the inhabitants' material needs. The raising of sheep and the production of cotton and flax were introduced in the area around 1800 in response to the need for fibers that could be used to produce threads and yarns. Before 1800 many farmers made clothing from deerskin. But such material was uncomfortable in wet or hot weather. Preparing both cotton and flax for the spinning wheel was laborious but produced much more acceptable clothing.

Originally, farming in the Southern Illinois area was an undertaking which would return a good day's wages for a good day's labor. Although the timber soils of Southern Illinois were never as fertile as the prairie soils to the north, early farmers were able to obtain a good crop from the Southern Illinois soils because in their virgin condition they still contained adequate fertility to produce good crops. Unfortunately, farmers had not learned how to maintain the fertility of soils and how to protect them from erosion.

Early Farm Research in Southern Illinois

By 1900 agricultural scientists were beginning to understand how scientific principles should be applied to farming. Cyril G. Hopkins of the University of Illinois College of Agriculture was probably the world's leading agronomist by the turn of the century. As early as the 1890's he had developed and was extensively promoting the appropriate use of fertilizers along with adequate crop rotations, so as to preserve and improve the fertility of soils. In conducting his research and extension programs, he recognized that the soils in Southern Illinois had been depleted of their natural fertility through improper farming practices. Through several small experimental plots in Southern Illinois, he set out to study the crop production problems peculiar to soils in the area and to demonstrate the advantages of proper fertility and crop rotations. It was a widely held opinion of farmers throughout the state that although much of the land in Southern Illinois had been "farmed out," with good cultivation and rotation the land could be made profit-

able again. Hopkins maintained that proper fertilization was also needed.

Hopkins made this point in an address before the Illinois State Farmers' Institute at Harrisburg, Illinois, on February 23, 1915.[11]

Even the Central Illinois farmer who has had only the privilege of helping to wear out rich land may not understand the problem, nor appreciate the difficulty and expense of building up poor land, nor realize the possibilities of changing the value of Southern Illinois land from $40 to $200 an acre by the application of knowledge and the investment of moderate capital in soil improvement.... In my judgment there is no better opportunity in American agriculture for the investment of money and mind, of science and sense, of brain and brawn, than in the farm lands of Southern Illinois; and I should add that there are few better opportunities in the United States to lose money in agricultural investments than in the attempt to profit from continuing to wear out these same lands.

If you are thinking of buying a Southern Illinois farm and are expecting to make money out of it merely by cropping with good rotation and cultivation, then you are planning for your own failure. I realize, of course, that there are northern farmers sufficiently ignorant of Southern Illinois, or sufficiently rich in their own conceit, to think that if they could only put their hand to the plow they would make the Southern Illinois prairie produce the same bountiful crops as the black corn-belt land produces.

I know a landowner of Central Illinois who bought a section of the common level upland in a county not far from Saline; and he imparted the secret that the only farm difficulty in Southern Illinois was that the soil was "water-logged," and that all it needed to make it the equal of the $200 corn-belt land was tile drainage. The fact that Southern Illinois lands had been settled from the beginning by intelligent white people, many of whom had tried tile drainage, at least in a small way, and had derived little or no benefit from it on the common upland, made no difference in the opinion of this man; and he took but little interest in the fact that long-continued careful investigations conducted by the State University on experiment fields in several counties of Southern Illinois had not yet shown sufficient benefit from tile drainage on the most common upland soil to pay interest on the money invested in the tiling.

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[11] C. G. Hopkins. *How Not To Treat Soils.* Illinois Agricultural Experiment Station Circular 181, pp. 4-5. 1915.

A good corn-belt farmer once said to me that all the Southern Illinois land needs is to grow clover, and thus, as he expressed it, "get the yellow color out of the soil." Another northern man who held the same opinion bought a farm of common upland in the Southern Illinois, and actually seeded clover and lost it for twelve successive years before he became convinced that he had something to learn about growing clover in this end of the state.

It was Hopkins' contention that good cultural methods, crop rotations, and the application of farm manure were not adequate to maintain and increase the fertility of any soil, no matter how naturally fertile. Hopkins' own research, as well as that conducted in Ohio and Pennsylvania, convinced him that a system of permanent soil fertility must be based on three general principles: (1) to farm profitably a farmer must use the cheapest possible sources of fertility; (2) one essential element of plant food can limit crop yields, and more of this limiting element must be put back into the soil than is removed by crops and natural causes; and (3) finely ground limestone must be used to correct soil acidity so that legumes can be grown and assure the availability of nitrogen in soils. Hopkins' research identified phosphorus as the one element of plant food that was limiting crop yields.

Hopkins was so anxious to demonstrate for farmers how proper fertility practices combined with good cultivation, crop rotations, and manure applications could once again make farming profitable in Southern Illinois that he purchased a 316-acre farm near Salem, Illinois, with his own money in November, 1903. What became known as "Poorland Farm" was purchased at an average price of $18.24 an acre.[12] In describing this farm, Hopkins wrote: "It comprised about 300 acres of poor gray prairie land (the commonest type of soil in about twenty counties in that part of the state) and a few acres of timber land. It was christened 'Poorland Farm' by others who knew of its impoverished condition, and I finally adopted this as the farm name."[13]

Although farmers in the area scoffed at the idea of anyone paying good money for such land, "Poorland Farm" was exactly what Hopkins wanted to provide a strenuous test of his approach to maintaining and improving the fertility of soils. Hopkins divided his farm into 40-acre

[12] R. G. Moores. *Fields of Rich Toil.* University of Illinois Press. P. 168. 1970.

[13] C. G. Hopkins. *Bread From Stones.* Illinois Agricultural Experiment Station Circular 168, p. 3. 1913.

plots. In each plot he left a check strip measuring 6 rods wide and 80 rods long. Crop rotations and applications of manure were the same for each plot, including the check strip. Half of the check strip received limestone, but not phosphate. The other half received neither limestone nor phosphate. The remaining 37 acres in each plot received both limestone and phosphate. The effects of these experiments on Hopkins' farm were striking. The untreated check strips were devoid of clover and produced only poverty grass. The grain crops on the check strips seldom met the costs of production. The treated portions of the plots produced abundant clover and grain crops. Hopkins had shown that good cultural practices, good seed, and the application of farm manure to farm lands were not enough to result in profitable farming.

Writing about his experiment, Hopkins noted:

Poorland Farm is in no sense an experiment station, and neither is it a "show" farm. No use is made of high-priced or artificial commercial fertilizers. It is operated solely from the economic standpoint, and with the full understanding from the beginning that as a rule general farming is not a highly profitable business, and that it is highly unprofitable on poor land. On the other hand, it is equally well known that intelligent permanent soil improvement on land that must be or will be farmed is both the safest and the most profitable investment open to the farmer and the landowner.[14]

Southern Illinois Farming in the 1930's

Unfortunately, many farmers in Southern Illinois did not or could not adopt better farming practices during the first few decades of the 1900's. Corn yield figures for Pope County, as compared with statewide yields, indicate how little progress was made up to the 1940's by Southern Illinois farmers. Through the late 1800's and early 1900's, average corn yields for Pope County differed little from statewide average yields. For instance, from 1876 through 1886 the average yield of corn in Pope County was 26.2 bushels an acre and the state average was 28.8 bushels an acre. But for the 11 years from 1926 through 1936, Pope County had an average yield of 21.1 bushels an acre, while the state average had increased to 32.6 bushels. The Pope County average for the next eight years — 1937 through 1944 — amounted to 27.6 bushels

[14] Hopkins. *Bread From Stones,* p. 7.

an acre, and the state average was 48.6 bushels. Thus while the average acre yield for Pope County remained as it was in 1876 through 1886, the state average had increased by almost 60 percent.[15]

This relative decrease in the productivity of Pope County farm lands has been documented in other ways. Eight farms that were listed in an 1893 Pope County Biographical Review[16] as being among the best in their day, were visited by University of Illinois staff members in early 1937.[17] The owners of most of these farms were descendants of the original owners. These farmers all had the same story to tell. Crops such as corn, potatoes, wheat, oats, and red clover thrived until about 1900 when the small amount of natural fertility of the soil was depleted through cropping and erosion. By 1937 not even red clover could be grown well without expensive soil treatments. Commercial potato production was abandoned, wheat production declined dramatically, and corn yield was about 15 bushels an acre or less. Erosion had steadily reduced the acreage of crop land. Some farmers could remember when badly gullied fields had once been farmed.

On the other hand, it should be pointed out that some farms had not depreciated. University staff located one farm which not only had survived but had prospered. This 230-acre tract with flat land subject to little or no erosion also included some rough, hilly land that was subject to serious erosion if cultivated. The rough land had been kept in pasture almost continuously, and precautionary measures had been used to keep erosion at a minimum. Dairy and beef cattle were grazed on the hilly land, and manure was used on all parts of the farm. Because of natural advantages and good management, crop yields had actually increased. The farm was still owned by descendants of the original settler.

Farm Resources and Size

The average gross income per farm in 1929 in Pope County was $820; 45 percent of all farm families had an average gross income of less

[15] Illinois Cooperative Crop Reporting Service, Springfield. See reports for various years.

[16] *The Biographical Review of Johnson, Massac, Pope, and Hardin Counties, Illinois.* Chicago Biographical Publishing Co. 1893.

[17] V. B. Fielder and D. E. Lindstrom. *Land Use and Family Welfare in Pope County, Illinois.* Illinois Agricultural Experiment Station in cooperation with USDA, Division of Land Economics. Mimeo, p. 7, 1939. U. of I. Archives, Record Series 8/1/2, Box 109. (Also available in the Illinois Historical Survey Library in the U. of I. Library.)

than $600. The state average farm family income for 1929 was $2,467. The average income for a sample of 138 farm families within the area covered by the Dixon Springs Agricultural Center was only $277 in 1933.[18]

A survey conducted by University of Illinois researchers shows the poor situation in which a large proportion of Southern Illinois farmers found themselves in the mid-1930's. Based on a sample of 807 farms (well over half the farms in Pope County in 1935), the distribution of farm families to acres farmed was:

8 percent cultivated 5 acres or less
24 percent cultivated 6 to 20 acres
23 percent cultivated 21 to 40 acres
26 percent cultivated 41 to 80 acres
15 percent cultivated 81 to 160 acres
4 percent cultivated over 160 acres

About 80 percent of the farm families sampled were cultivating 80 acres or less, and about 55 percent were cultivating 40 acres or less. It is no wonder that many families could not earn an adequate income from farming in Pope County.[19]

The survey found that many Pope County farmers did not have enough of the more common types of farm resources and equipment. A total of 16 percent of the farms had no farm buildings, and only 9 percent had more than one building. In one northern area of the county half the farms had no team of horses and no tools with which to work; many had no stock, not even chickens. A cow and a few chickens are ordinarily considered indispensable, especially where subsistence farming is practiced. The destitute condition of many rural residents of Pope County was further illustrated in a review of 107 rural applicants to the Illinois Emergency Relief Commission in 1935; only 18 had houses that were in a good state of repair, while 89 were either in bad condition or beyond repair.

Population Trends

The population of Pope County increased steadily from the time the first settlers arrived around 1800, until by 1890 it had reached a peak of 14,016.[20] From 1890 to 1930 the population decreased markedly

[18] Fielder. Op. cit., p. 27.

[19] Fielder. Op. cit., p. 30.

[20] Population data were taken from U.S. Census Reports from 1890 and succeeding years.

each decade, so that by 1930 it was 7,996, a decrease of 43 percent. From 1900 to 1930 the total population decreased 41 percent, with the rural population decreasing 52 percent. Meanwhile, during the same 30-year period, the total population of Illinois increased by 58 percent. One can only speculate on the effect of this drastic population decrease on Pope County. It no doubt caused a great deal of disorganization in the area's social organizations — for instance, one report has it that one church in one year lost every member of its board of deacons because of their departure from the community.

The villages and towns of Pope County had also been losing population as their importance as trade centers decreased. Eddyville had a population of 212 in 1890, but had declined to 115 in 1930. The population of Hamletsburg dropped from 180 in 1890 to 113 in 1930. An exception to this trend was Golconda, which maintained a population of about 1,200 between 1890 and 1930. Probably the main reason for the loss in population in Pope County during this time period was the lack of many manufacturing or other enterprises except farming.

Pope County in 1930 did not have the larger-than-average families which one often finds in depressed areas; 60.8 percent of families had only one to three members, compared with 54.5 for the state as a whole and 45.4 for rural families. A total of 31.5 percent of the families had four to six members, compared with 37.5 percent for the state as a whole and 42.1 percent for rural families. Only 7.6 percent of Pope County families had over seven members, while 8.1 percent of total Illinois families and 12.5 percent of rural families fell into this category.

Occupations and Industrial Conditions

About 62 percent of the 1,160 heads of families studied in Pope County in 1935 were directly dependent on agriculture for a living. The other 38 percent were fairly evenly divided between the professions, business, skilled labor, and common labor. There was a striking difference between the percentage employed in agriculture in Pope County (62 percent) and the 11 percent of the total state population involved in farming. The largest employment category in the state in 1935 was manufacturing occupations, but this category was scarcely represented in Pope County.

Shipping on the Ohio River was at one time an important industry. Golconda was the shipping port for a large portion of southeastern Illinois. With the decline in Ohio River traffic around the turn of the

century, boats seldom stopped at any of the small river towns. In the towns' earlier years, small flour mills with a capacity of 50 to 100 barrels a day were in operation at several places in the county. Forests were once a major resource, but they had been so depleted that there were few sawmills and few people employed in wood industries by the 1930's.

Fourteen manufacturing establishments were operating in 1935, seven in rural areas and seven in the villages. Ten other plants had recently been closed. The industries that were still operating included two small sawmills and one small handle factory, two coal or fluorspar mines, and nine grist or flour mills. These 14 plants employed 28 men full time and 25 part time. About 113 men had been employed in the ten plants that had been shut down.

Public Assistance

Southern Illinois had a larger percentage of families on relief than any other section of Illinois during the 1930's. This was caused by the lack of agricultural resources and the fact that coal mining, itself depressed, was the single industry of importance throughout the area. The number on relief in Pope County hit its peak in 1937 when well over half the families in the county were receiving public assistance of some kind. The sources and amounts of public assistance in Pope County in February, 1937, were[21]:

Type of assistance	Number receiving aid	Estimated total cost
Direct relief	243	$ 2,462
Old-age assistance	399	5,922
Resettlement Administration grants	165	2,310
National Youth Administration	20	267
Civilian Conservation Corps	100	2,500
Works Progress Administration	201	7,108
Forest Service	3	120
Resettlement Administration workers	200	8,060
Total	1,331	$28,749

[21] Fielder. Op. cit., p. 51.

Home of a once-prosperous farmer in the Dixon Springs purchase area.

Housing in Pope County

The 1930 Census reported the average value of farm homes in Pope County as $533, compared with an average rural home value in the state of $1,802. Three-fourths of the houses belonging to the 1,160 families studied by the University of Illinois[22] were of frame construction, while about one-eighth were at least partly made of logs. Although a large amount of native stone was available, there were few stone houses. Over half the homes studied needed considerable repair work, only about one-third were in good condition, and at least 15 percent were beyond repair. Many of the more pretentious homes in the rural areas, with large porches and huge stone chimneys, had been abandoned and were falling to pieces.

Sixty-five percent of the families studied reported they had no well, using only cisterns even for drinking water. Since drinking water from cisterns is known to cause health problems, it is no wonder a University investigator reported the cisterns in one area were particularly poor and that someone was sick in almost every family she visited.

Almost all families used stoves for heating. Furnaces were used by only 21 families, and 26 families had no heating facilities at all except for fireplaces. Electricity was used by only 6 percent of the families (in and near Golconda), and about 80 percent used kerosene for lighting. A city water system was built by the Public Works Administration in Golconda in the early 1930's. Prior to that date, many families had to walk a block or more to the courthouse square for drinking water.

Health Conditions

From 1933 through 1935 the infant mortality rate per 1,000 births in 34 Southern Illinois counties was 64.3, compared with a rate of 47.0 in 32 northern counties exclusive of Cook County. Public health records show the same magnitude of differences in death rates from such diseases as tuberculosis, diphtheria, typhoid, and pneumonia.[23]

There was no recognized hospital in Pope County, and the number of registered physicians per 1,000 population was far below the state average. The nearest general hospitals approved by the American Medi-

[22] Housing data were taken from Fielder, op. cit., p. 34.

[23] Health data were taken from Statistical Bulletin No. 58, Illinois Department of Mental Health; and Census of Population, 1930, U.S. Bureau of Census.

cal Association were in Harrisburg, Illinois, and Paducah, Kentucky.[24] There was a general hospital owned by the Rosiclare mines located near Rosiclare in Hardin County, Illinois, about 10 miles from Golconda. It was fully equipped for the care of 16 patients, but was not an approved hospital. Patients who were not able to pay were not admitted unless they were on direct relief.

Tuberculosis was so widespread in the 1930's in Golconda that area physicians and health officials considered the situation alarming. Trachoma, an eye disease, was also serious in Pope County and other parts of extreme Southern Illinois. The generally low incomes prohibited medical care, medicine, or nourishing food. In addition, many people in the rural areas knew little about maintaining proper sanitary conditions.

The few data available from the 1930's indicate there may have been more of a mental health problem in Pope County than in many other areas of the state. About one-fourth of the 80 cases of chronic illness found among unemployable families were described as mental illness. State Department of Public Welfare data on Pope County admissions and population in state institutions in 1934 and 1935 show that the Pope County rate was higher than that of the state as a whole.[25]

Public Education

The general quality and level of public education in Southern Illinois were considerably lower than in many other sections of the state in the 1930's. Again, Pope County can serve as the example.[26]

Organization and Equipment. During the 1934-35 school year, Pope County had 63 grade school districts and one high school district, plus an additional high school that was not in any organized district. Sixty districts had a one-room school. One district had a two-room school. Golconda maintained a separate grade school for about half a dozen black children, while elsewhere in the county children of the two races attended the same schools together. Although the buildings themselves were generally in good shape, both quantity and quality of educational and playground equipment were lower than ordinarily found

[24] American Medical Association. *American Medical Association Directory of Registered Physicians and List of Approved Hospitals.* 1930.

[25] Illinois Department of Welfare. *Report of Statistician,* 1933-1935.

[26] Much of the information in this section was taken from Fielder, op. cit., pp. 57-69.

in schools farther north in Illinois. The value of equipment in all of the county's schools was only $910.72 per district, compared with the Illinois average of $1,673.63 per district.

Teachers' Qualifications and Salaries. Of the 83 school teachers in Pope County in 1934-35, 73 taught in elementary schools and 10 in high schools. The training of Pope County elementary school teachers was far below the Illinois average. Of the 73 elementary teachers, 14 (19 percent) had no training above high school, while the state average was 3 percent; 52 percent had only one year or less of college or university training (state, 23 percent); and only one had more than two years of college or university training (state, 26 percent). Training of the high school teachers was also considerably below state averages. Seven of the ten high school teachers in the Golconda and Robbs high schools had completed four years of college or university work. For the state as a whole, nine out of ten high school teachers had four years or more of college or university work.

Teachers' salaries were very low in Pope County. Sixty-two of the 73 elementary school teachers were receiving less than $500 in 1935, and none of the high school teachers was paid as much as $1,400. The average annual salary for all Pope County teachers was $485.88, compared with the state average of $1,316.62.

Children's School Attendance. In 1935 only 81 percent of all school age children in Pope County attended school. For those who did register and attend school, the daily attendance record averaged only 80 percent, noticeably lower than the state average of 89 percent. This low attendance record was not unusual for a rural area in which poor road conditions would have made it impossible for some children to attend school at some times of the year. It is also probable that illness and lack of food and clothing kept some boys and girls from going to school regularly. A total of 17.6 percent of the school age children were enrolled in high schools in Illinois, but only 11.9 percent of school age children in Pope County were attending high school. Apparently, a large proportion of boys and girls of high school age in Pope County were not receiving a high school education.

Adult Education Levels and Attitudes. Four-fifths of all those responsible for taking care of families had an eighth-grade education or less. Only 3.6 percent were high school graduates; less than 1 percent were college graduates. Of all persons over 10 years of age in Pope County 3.5 percent were illiterate in 1930, compared with an average of 2.4 percent for Illinois. Through the mid-1930's there was

no adult education program in the county other than that of the University of Illinois Extension Service in Agriculture and Home Economics. The 1930 Census showed that only 13 percent of the families in Pope County had radios, compared with a national average of 21 percent for farmers and 40 percent for villagers. Many of the rural families seldom saw newspapers.

University of Illinois researchers in the county found there was a belief that no one should receive relief (public assistance) except the sick and the old; that is, everyone should work for what he was given.

Land Retirement and Rural Resettlement

By the early 1930's, the entire United States was in the depths of the Great Depression. In many ways this economic crisis served as the catalyst for a multitude of powerful influences that brought social changes in the United States. One result of the Great Depression was the realization that too many people were trapped trying to earn a living by farming in areas containing predominantly marginal and submarginal agricultural lands. These unfortunate people were slowly falling further behind the great mass of American people, while at the same time destroying lands which they did not know how to farm properly.

Poor people living and working on poor land constituted a major concern for officials of President Franklin D. Roosevelt's "New Deal" when they came into power in the early 1930's. When the prices of crops rose, the farming of poorer lands increased, so that the position of the more efficient farmers in the supply-demand situation was weakened. When the prices of crops fell, marginal farmers lost their purchasing power, were unable to pay taxes, and required huge expenditures by local and national governments. Thus it became the basic belief of New Deal officials that the cultivation of poor lands was a threat to the national economy and a practice inconsistent with sound conservation policy. New Deal policymakers also felt that the Agricultural Adjustment Act (AAA), which had been enacted to remedy the problems of overproduction and low farm income, was doing little for the poor lands and even less for the poor farmers.

Prior to 1936, land-use planning had lacked coordination, as a discussion of the many agencies engaged in this work before the creation of the Resettlement Administration (RA) reveals. The Public Works Administration created a National Planning Board, which, in turn, organized a Land Planning Committee in 1933. An executive order of

July 31, 1933, set up a Scientific Advisory Board, which had a Land Use Committee. The AAA's Land Policy Section, the U.S. Department of Interior's (USDI) Division of Subsistence Homesteads, and the Surplus Relief Corporation (SRC), using Federal Emergency Relief Administration funds (FERA), were concerned with land use. The USDA and the USDI formed a joint committee to reconcile land retirement with reclamation. On April 28, 1934, a Cabinet committee began to study the coordination of land-use programs, but it disbanded on June 30, 1934, when the National Resources Board (NRB) received overall authority in land-use matters.[27]

The work which most directly paved the way for the Resettlement Administration began with the establishment on February 28, 1934, of a Submarginal Land Committee, which consisted of representatives of the USDA (including the AAA's Land Policy Section), the USDI (National Park Service and Office of Indian Affairs), the FERA, and the SRC. Meanwhile, in the spring of 1934, the FERA set up state Rural Rehabilitation Corporations. In July, 1934, the FERA's Land Program Committee superseded the Submarginal Land Committee and the SRC in the purchasing of poor lands (such as those which became the Shawnee National Forest) and the resettlement of their occupants. The Land Program was to operate through the FERA's Rural Rehabilitation Division in cooperation with the various divisions of the USDA and the USDI. On July 18, 1934, the Special Board for Public Works approved the program outlined by the director of the Land Program and allotted $25,000,000 to it.

Finally, the Resettlement Administration was created on May 1, 1935, by Executive Order 7027. Its funds were obtained through the Emergency Relief Act of 1935. The task of the RA was to unite under one administration the assortment of activities inherited from other agencies, both federal and state. Included were the Land Program and the Rural Rehabilitation Division of the FERA, the Division of Subsistence Homesteads of the USDI, the Land Policy Section of the AAA's Program Planning Division, the Farm Debt Adjustment Program of the Farm Credit Administration, and the state Rural Rehabilitation Corporations. The four main tasks of the new agency were: (1) suburban resettlement; (2) rural rehabilitation; (3) land utilization; and (4) rural resettlement. The RA's Land Utilization Division and Rural Resettlement Division are of most interest in relation to the establishment of the Dixon Springs Agricultural Center.

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[27] Much of the information concerning federal programs was taken from B. Sternsher. *Rexford Tugwell and the New Deal.* Rutgers University Press. 1964.

Resettlement farm planners advised that many farms in the project area were too small to support a team. They suggested that farmers share work stock and machinery.

The Land Utilization Division was responsible for the first half of the retirement-resettlement sequence. When the RA was organized, it estimated that there were 650,000 farm families on 100,000,000 acres of poor land which could not have been farmed profitably by experts at that time. It did not intend to acquire all of this land, but rather to provide for "adjustment" of the poor land-poor people syndrome. The lot of some farmers could be improved by restoration of the land and education in agricultural techniques suitable for the type of land conditions. Where it was not possible to rehabilitate the people on the land they occupied, the RA planned to make an initial purchase and retirement of 9,000,000 acres (as it turned out, this was the final amount of land purchased and retired under this program).

The first step in land retirement was the RA's purchase, from voluntary sellers, of worn-out land. The Land Utilization Division, in cooperation with other agencies, then put the land to nonagricultural uses: wildlife preserves, recreation facilities, Indian reserves, pasturage, reforestation, and research (such as the Shawnee National Forest and the Dixon Springs Agricultural Center in Southern Illinois). This Division administered over 200 work projects in caring for retired land and in carrying on certain conservation activities such as control of soil erosion, seacoast erosion, stream pollution, and flood control.

The main research unit of the Land Utilization Division was the Land Planning Section (LPS). This Section cooperated with the USDA's Bureau of Agricultural Economics to produce studies for the Rural Resettlement Division as well as its own Division. The LPS studied the nation's land problems, located areas for resettlement, and compiled a report on resettlement practices. It had to concern itself with resettlement, since the RA could not retire land to nonagricultural uses until it had a place for the displaced farmers to go.

Rural resettlement communities were planned by the Rural Resettlement Division of the RA. This Division screened the plans of uncompleted or proposed projects inherited from the Division of Subsistence Homesteads and the Federal Emergency Relief Administration and continued the planning of those communities which were retained. The Construction Division handled the actual building of resettlement projects. Such a resettlement community was proposed for the Dixon Springs area, but the planned community was eventually rejected as being economically unfeasible.

Proposals for an Experiment Station

Throughout the late 1920's and early 1930's, the College of Agriculture of the University of Illinois had been seeking the means to establish an agricultural experiment station in Southern Illinois. The College had been urged to do this at various times by individual farmers and groups of farmers in Southern Illinois, and by two advisory committees consisting of farmers. In 1933 the Forest Service of the USDA and the Land Program Committee of the FERA announced plans to purchase large areas of forest and forest-type land in Southern Illinois. This appeared to be the opportunity the College of Agriculture had been seeking. Dean H. W. Mumford appointed a committee chaired by Professor H. P. Rusk, head of the Animal Husbandry Department, to determine whether arrangements might be made with the various cooperating agencies for the College of Agriculture to use some of the land as an agricultural experiment station. There followed an extensive series of discussions between representatives of the College and of various federal and state agencies. Tentative plans for the organization and operation of such an experiment station were developed.

On August 22, 1933, Professor Rusk sent a tentative proposal concerning the establishment of an experiment station in Southern Illinois to Henry A. Wallace, Secretary of Agriculture. (The complete text of this letter and a project proposal appears on pages 147 to 150.)

Records from the period indicate that the uniqueness of the College's proposal immediately caught the fancy of administrators in all concerned agencies. For instance, E. W. Sheets, Chief of the Animal Husbandry Division of the Bureau of Animal Industry of the USDA, made significant efforts on behalf of the proposal. In a letter to Rexford G. Tugwell, Assistant Secretary of Agriculture, on October 12, 1933, Sheets said that the proposed project was urgently needed to show what could be done to reduce erosion and control run-off in a relatively short time and at a minimum cost on poor, rolling land, recently in cultivation. Newly proved methods of control and pasture management and plants found to be suitable for grazing could be tried out on a scale large enough to meet the requirements and yet be practical in their application. He added, "Results of such trials are far more convincing to farmers than are results from small plots which must be used at other state or federal stations designed for such studies."

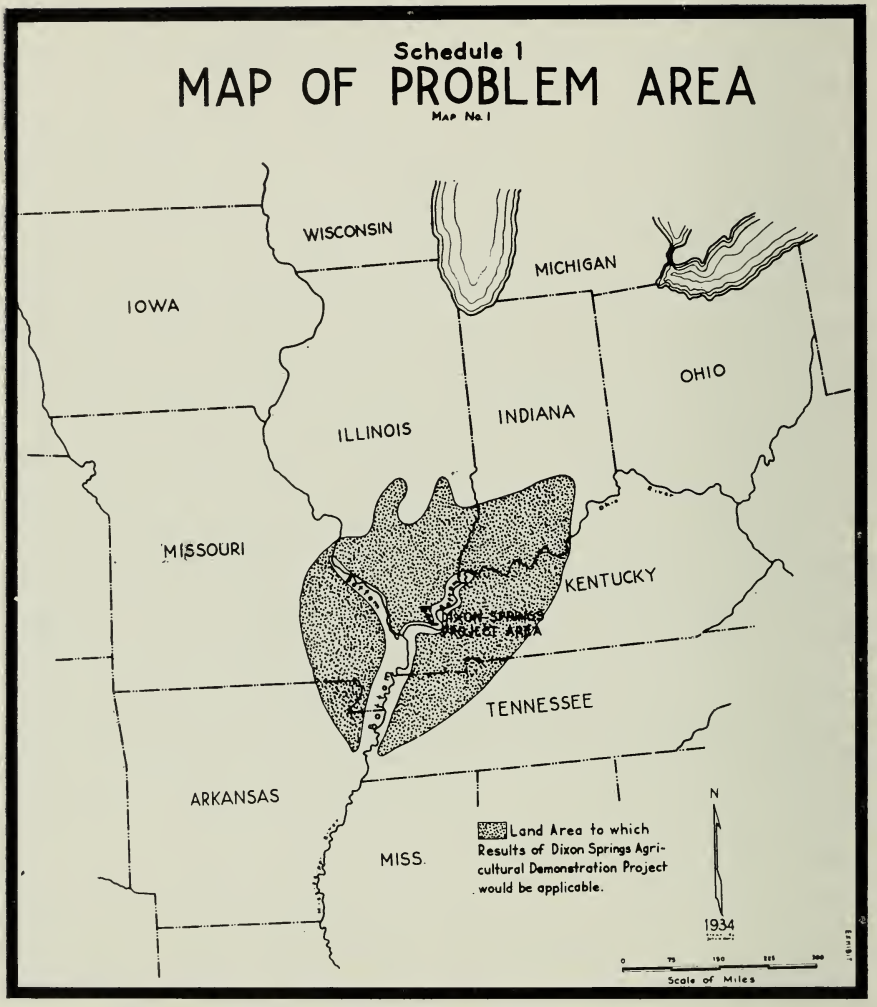
Secretary Tugwell's support for the proposal was important because he was an influential New Deal "brain-truster" who was soon to become Director of the Resettlement Administration which would inherit the Dixon Springs proposal from the Forest Service and the FERA.

On November 20, 1933, Assistant Secretary Tugwell wrote to Harold Ickes, Secretary of Interior, "We [the USDA] have tentatively approved the location in Southern Illinois of a correlated project for the study of soil erosion, reforestation, and livestock production into a system of farming involving the greater use of pastures and forage crops."

After considerable interagency consultation and after visits to Southern Illinois by the College's representatives, a site north of Dixon Springs on Highway 146 near the villages of Glendale and Robbs was chosen in the fall of 1933. At the suggestion of federal officials in Washington, the College's original request for 2,000 acres for the project was increased to 16,000 acres. The project area became known as the Dixon Springs Experiment Station (now the Dixon Springs Agricultural Center). Because of administrative reorganizations of the federal agencies involved in the project, the final plan was not approved until 1935. Land acquisition had started before that time, and by November 15, 1935, had progressed to a point where it was possible to enter the development phase. For various reasons the acreage was reduced, and eventually 9,861 acres were purchased under the land-acquisition program in the Dixon Springs area. Of this total, 5,090.6 acres were to be used by the Dixon Springs Experiment Station, and 201.4 acres were included in soil and water run-off studies to be conducted by the USDA Soil Conservation Service. The remaining area, 4,569 acres, was to be retained by the Forest Service for forestry or recreation uses. Final ownership and administration of the area underwent many changes in plans before the entire area was transferred by Executive Order to the Forest Service. Portions of the land, as described above, were then leased by the Forest Service to the University of Illinois and the Soil Conservation Service.

In the acquisition phase of the project, all land was acquired through direct purchase except five tracts. Of these five tracts, all but one were voluntary condemnations needed to clear title to the land. During the land acquisition program, 93 tracts were acquired at a total cost of $138,486.74, or an average of $14.04 an acre (see pages 248 and 249 for list of tracts). Of this cost, it was estimated that $5.00 an acre represented the value of improvements, and the remainder represented the actual value of the land. Most of the land was purchased from funds made available by the Works Progress Administration. Ten tracts costing $14,202 were purchased from funds provided by the Bankhead-Jones Act.

As of 1940, $880,995 had been spent in the development of the area. All of those funds were received by transfer from the Works



This map was developed in 1934 to show the area in which the results of work at Dixon Springs were expected to be applicable. The expectations have been fulfilled.

Progress Administration, with the exception of $116,340 transferred from the Public Works Administration. All work was conducted under the direction of personnel appointed by the various federal and state agencies that were at one time or another associated with the project and through the use of men assigned by the Works Progress Administration. From 1935 until mid-1938, when the final payments were made on the purchased tracts, the College of Agriculture did some preliminary work under temporary leasing arrangements with the Resettlement Administration and the Illinois Rural Rehabilitation Corporation (the two agencies holding title to the lands involved).

The original plans of the Resettlement Administration called for the relocation of the former landowners on a land development project near the village of Robbs in Pope County (the Robbs Resettlement Area). Detailed plans for this resettlement area were drawn up by the staff of the Regional Office of the Rural Resettlement Division of the Resettlement Administration. However, on February 26, 1936, the national office of the RA rejected the plans on the grounds that they were not economically sound. The national office recommended that the land which had been purchased for the Robbs Resettlement Area be turned over to another division of the RA, and that the regional office "look elsewhere for land on which to place the people that you contemplated settling on the Dixon Springs Project."

The Station Established

The preceding discussion shows that the Dixon Springs Agricultural Center had many roots. The forces and conditions which led to the establishment of the center were both regional and national in nature. In combination, these forces produced the Dixon Springs Agricultural Center; independently, such forces would have produced, at best, an operation of limited scope. Time has proved the effectiveness of the Dixon Springs Agricultural Center — both as a site for basic scientific research and as a practical demonstration of the course for agriculture on Southern Illinois lands and in the adjoining states.

Later portions of this volume will detail accomplishments at the Dixon Springs Agricultural Center. The recounting of these accomplishments will make it clear that the men and women of the Dixon Springs Agricultural Center have met the challenge laid down for them and have fulfilled the promises made by Dean J. C. Blair in his remarks at the formal dedication on October 8, 1938.

Representatives of many agencies attended the dedication of the station. From left: W. J. Carmichael; R. H. Musser; B. B. Clark; L. E. Sawyer; Carl C. Taylor; W. L. Burlison; J. C. Blair; S. F. Wilson; Congressman C. V. Parsons; J. R. Clifton; H. P. Rusk; D. B. Gates; and C. A. Van Doren.

This modest effort here begun will be a challenge to the scientific man, as well as to the practical farmer. Organized research is necessary here, as well as in all fields of human endeavor. Out of this research comes new subject matter, new thought, and improved technique.

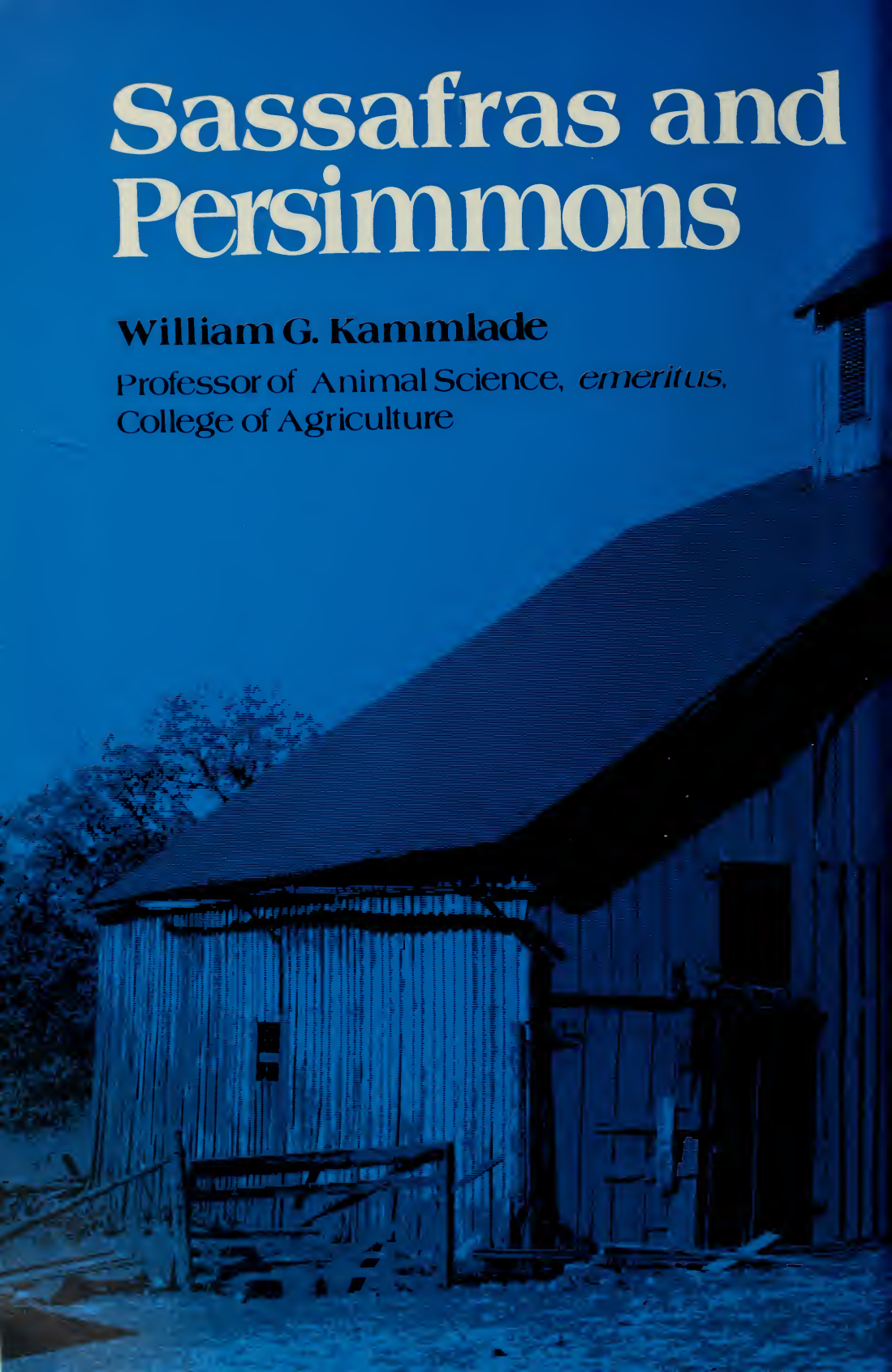
We are grateful for this beginning already too long delayed. We are also mindful of the tremendous responsibility placed upon us. I wish to emphasize, also, that so far as the University of Illinois and the Agricultural Experiment Station are concerned, the portion of the Dixon Springs area which is to be under our jurisdiction will be used for fact finding and demonstration purposes. This project is in no way a test of any untried theories on rural sociology. It must conform to the high standards of precision in collection of data and unbiased interpretation of facts already established by the University in all of its research divisions. Methods and policies here established have been, and will be, determined by men who are devoting their lives to this type of work and who, by successful experience, have proved themselves capable of carrying that responsibility. May I add, also, that the personnel will be selected on the merit basis, without prejudice on account of race, religious creed, or political belief. These things I promise you as a guarantee that your confidence, good will, and cooperation in this project will not be misplaced.

Therefore, by the authority of the President and the Board of Trustees, I hereby accept the responsibility for the administration of this new and important unit of the Illinois Agricultural Experiment Station.

Sassafras and Persimmons

William G. Kammlade

Professor of Animal Science, *emeritus*,
College of Agriculture



Preface

"Sassafras and Persimmons" is my account of the first quarter-century of the Dixon Springs Station, from its exploratory beginning in 1933 to the later 1950's, at which time my close association with it ended.

I had several reasons for setting forth my recollections and reflections in this book. At the University of Illinois, I fell victim to the scholarly affliction of *Cacoethes scribendi.* Once one is afflicted, the urge to write is incurable. I wrote one book, parts of two others, several agricultural experiment station publications, and many articles for farm papers.

Then came my retirement, accompanied by a flood of advice from young experts on the "problems of senior citizens," all of whom recommended activity. That advice really had its origin in the comment of a little girl to her grandmother who was idly reminiscing. Said the girl, "Don't just sit there, Grandma; knit something." And so I have written something, a few words a day, for many days.

For 25 years, I had been associated with an endeavor in soil conservation and improvement, which we hoped would increase farm production in Southern Illinois. I am the only person still alive from the University of Illinois who had a hand in the establishment of what came to be known as the Dixon Springs Station and later as the Dixon Springs Agricultural Center. Thus I might contribute something to the story of the remarkable agricultural history of this nation, and especially that of a region where it was much easier for people to meet their needs than their desires.

Finally, I wanted to respond to the request of several of those now working at the station for some record of the conception, the early development, and the human story, to supplement the technical data and reports. Such a record might show agricultural students some of the historical dimensions of the industry, and our pioneering efforts might stimulate even greater achievement. I might also provide some well-deserved tribute to those with whom I was associated in work that attracted far more attention and was much more influential than any of us predicted at the time.

Those I would like to thank most are no longer living. I hope this story, which is also their story, will express my gratitude for my memories of them. — *W. G. Kammlade*

Preliminary Musings

Like most of you I have spent many hours meditating on the way things are and what natural phenomena and human activities caused the world to be the way it is. I knew that geological conditions had made Southern Illinois different from the central and northern parts of Illinois. How can people in different areas with different conditions adapt their activities so they can get the best results from their labor? How do people learn what adaptations they need to make? Where do they get the information they need to help them change? The answers lie in teaching and research.

Teaching must be accompanied by learning, which is a do-it-yourself job. Even the desire to learn grows chiefly from within. Once you have learned something, no one can take it away, and you can share it with others without reducing your supply of knowledge.

If the information conveyed by the teaching is to be reliable, it must be capable of proof by the achievement of very similar results when it is used. Such proof is the purpose of research. Some research is called basic, which usually means that we don't see an immediate practical use, and some is called applied, which usually means that it deals with a practical use. Some basic research is sound but some is trivial, and the same is true of applied research. In the nineteenth century, the need for practical, applied research in agriculture led to the establishment of agricultural experiment stations in this country.

The research at these stations, the teaching, and the application of the lessons learned increased the quantity and quality of food in our country so that the average family could be well fed while spending only a modest part of the family income. But while this was happening to agriculture in general, agricultural production was low in Southern Illinois in the early 1930's. And the income of those who were producing it was also low. At the same time, Southern Illinois farmers were faced with the loss of the productivity of their soil through erosion and poor management. Perhaps there was truth in the belief of some Southern Illinois farmers that the experiment station in Urbana, in an area far away and far different from Southern Illinois, had failed to be of service to their part of the state and more attention was needed.

Thus the basis for the Dixon Springs Station. Much of the early work at the Station is not now regarded highly, as is also true of much of the early work at the station at Urbana. But the work served as a basis for later accomplishments. After all, an ear of corn or a head of

wheat cannot be produced without the earlier growth of the roots, the stem, and all the other parts, and without all the changes that occur during growth.

Change is often the object of our adulation, and we sometimes welcome change just because variety is a delightful seasoning for life. But many things have been changed very little by man, and some of these unchanged things are among the most significant and marvelous items we depend upon. Although few industries have been more profoundly affected by change than agriculture, it seems to me that in many important respects it has been least affected by change. The basic biological processes are much better understood than formerly, but they still take place much as they have for untold centuries. Seeds germinate and plants grow and mature much as they did in the past. The physiological processes by which animals are propagated have not been essentially altered, although we have studied them in detail and made minor modifications for man's benefit. The calf whose development starts with the union of the sperm and the egg goes through exactly the same stages, whether that union is brought about naturally or by artificial insemination with sperm from a bull thousands of miles away. We need to keep in mind what we have not done, as well as what we have done. We have not replaced nature.

Nevertheless, change was one of our goals when we thought about Southern Illinois. We knew that differences in natural conditions in Illinois were related to differences in the economic condition of people. but we needed to know whether changing one condition would result in a change in the other. If the soil could be conserved and improved, would the economic condition of the people be improved? Or if the condition of the people improved, would they then conserve and improve the soil and thus further improve their condition? These were the kinds of questions that those interested in the problems of Southern Illinois were confronted with.

Just as nutrients can be added to soil, information can be conveyed to people who will use it to make their lives more productive and satisfying. But the fertilizer must be worked into the soil, and the people must accept the new knowledge, before any improvement can be made. Whatever we learned at the new experiment station would be of no use unless the people used it in their work. During the 25-year period of which I write, those with whom I was associated wanted to do something in which the people of Southern Illinois could participate, something that would be significant in their work and lives and would meet both their needs and their wants. Since wants far exceed needs, people find much more satisfaction when their wants are fulfilled.

When people began to participate, progress would follow. But they would not be likely to participate unless they realized there was a chance for improvement. Their desire for improvement would come from a combination of dissatisfaction and hopefulness. Has not that always been true?

One of the main impressions from my preliminary musings was that in telling the story of the conception, establishment, and early development of the Dixon Springs Station, I would have to do much winnowing and sifting to keep the narrative reasonably short and readable, yet also reasonably complete. To do that, most technical data have been omitted, and the most important human and nontechnical features included. Hundreds of items have been left out, and some which had little or no effect on the work are included. Without some of the many amusing incidents, the station would never have been so successfully developed. Much of the work was hard and at times irksome and burdensome, so unplanned incidents added zest.

In many enterprises over-administration is more damaging than helpful. The work was generally free from administrative bangles and fiddle-faddle, although there were times when complications hindered achievement. Omitting such incidents would destroy truthfulness and conceal difficulties.

Although I am telling the story of an agricultural experiment station that has helped make agriculture the efficient, thriving business it is today, I would still write a love story. The love of work and helpful service motivated all of us to loyalty and devotion to duty on behalf of our two heroines — Demeter, goddess of fruitful soil, and Ceres, goddess of the harvest. We pursued them lustfully, for the restoration and improvement of their productive powers were at the center of our ambition and efforts. Though they were changeable and inconstant as the moon, we were fascinated by the possibility of their fruitful response to our persistent attention. Since "faint heart ne'er won fair lady" we used all the boldness and fervor we possessed to secure acquiescence to our desires.

Now, at the close of these rambling musings you are invited to Southern Illinois, a land rich in lore and legend, where you may be stimulated by the beautiful scenery of the Makanda Hills, where you may have your blood purified by sassafras tea, and where even the astringent, puckering taste of the half-ripe orange-yellow persimmon will not lessen your joy in the midnight song of the mockingbird mingling with the moonlight. If you will take time for careful observation and meditation as you stand on a grassy hillside and watch a calf and

its mother, don't be surprised if you conclude that nature succeeds even while men, who sometimes possess more knowledge than wisdom, fail. With some intelligent assistance from man, nature can strive successfully to overcome and repair the damages caused by his demands and carelessness.

First Days in Egypt

It was 1933. It was August. The days were hot and the nights were little different. Rain was needed. The grass was brown and the corn leaves were curled. There was little activity, and there was abundant evidence of the lack of prosperity. This had become more evident because of the nationwide depression. Yet there had been times when Southern Illinois had been more abundant than some of the more productive areas of the state to the north.

A hundred years earlier, because of crop failures many farmers from the central part of Illinois had gone south to buy grains and other materials. In 1831 there was heavy traffic into the Southern Illinois counties when they became the source of food and feed for the richer northern sections. As the farmers traveled these long distances, they were likened to the sons of Jacob going into Egypt for corn, and from that time on the southern third of Illinois has been known as Egypt.

We had gone to Egypt in search of a section or more of land where work could be established to develop a better system of farming to supplant or at least supplement one that had seen yields decrease, and the distress of many people increase. There was a new administration in Washington, and new efforts to improve the welfare of the people were announced almost daily. Agriculture was given a prominent place in the list. While food was too high-priced for many to buy all they needed, there was little profit in its production, and many farmers lost their farms because of low prices.

There were suggestions about what might be done to improve conditions, but few men realized how many years would be needed to effect stable and long-lasting benefits. There were also some facetious recommendations: "Move them out"; "let 'em eat cake or starve"; "give the country back to the Indians"; "turn it into a National Cemetery." Many people showed scant sympathy, a measure of contempt, and skepticism toward any effort either new or old.

However, the poor are not equally poor, nor are the prosperous equally prosperous. One needs only a few possessions to appear prosperous to him who has none. While there is a vast difference between

one dollar and a million, the possessor of either amount may be a capitalist. All he needs is a belief that whatever he has is his private property, that he is entitled to use it for his own purposes and for his own welfare, and that he is largely responsible for his condition.

But it is much easier for those who have been productive, and who have been paid for being so, to believe that we all make our own destiny, than it is for those who either are unable to get much response from their efforts, or who do not understand what constitutes a good effort, or who hesitate to make any effort. That there is always a better way seems elementary to many, but finding a better way is difficult for one who lacks the necessary knowledge and the skill and willingness to use it.

These and many similar thoughts occupied our minds and were expressed and discussed as we traveled about in the Makanda Hills, the Shawnee Hills, the Ozark Hills, or the Uplift, as the hilly section of Southern Illinois is variously called. We were teachers and investigators, and were sure that we knew the importance of motivation, knowledge, and skill, as the background of success in farming or any other enterprise. Much must be put into an enterprise to get much out of it, but, like the skeptics, we too wondered if enough could be put into farming in the area to make the region prosper.

We knew how to teach the successful, and how to help them toward still greater accomplishments; but we had no experience in teaching those who were unsuccessful, many of whom might have no desire to learn. Success for many is hard to attain, and when it has eluded them for many years, they are apt to lose hope, and seek satisfaction in just living.

It was on a much later trip to Southern Illinois that I was impressed with the complex difficulties in the quest for renewed effort. On this later journey we were accompanied by some officials from Washington who were interested in a program known as Rural Development, which was designed to give enlarged assistance to people in areas of low income. Similar programs had been under way for some years, but this latter one was the result of some special concern on the part of the Congress.

Statutes are for the purpose of making things possible or prohibiting them; but statutes, speeches, erudite pronouncements, and administrative actions do not in themselves do the work necessary for achievement. Many things such as rural development, soil conservation, and better management may be encouraged by laws, but accomplishments are due to the attitudes and actions of people stimulated to greater effort.

On this later trip we were visiting the farms of Everett Meeks and

Scenes such as these, showing no evidence of productivity and prosperity, were common in many of the hill sections of Southern Illinois in the early 1930's.

Charles Johnson, two Negro farmers in Pulaski and Alexander Counties. Both had made much progress during the year of our visit. We questioned them about their background, education, reading, general experience, and other matters, including why they formerly had done little or nothing to improve their soil, enhance their production, protect their crops, beautify their homesteads, or provide better pastures and rations for their animals. When Meeks was asked why he had done so little before, he hesitated in deep thought and then said, "It's hard to learn and be sure you're doing right. You read about something new in the paper, and time you've put the paper down and thought about it, time's gone on and you're left where you were. I've never asked Mr. Les or Mr. Stan (Leslie Broom and Stanley Ceglinski, representing the Extension Service as farm advisers in Pulaski-Alexander Counties) about anything but what they told me what I wanted to know. But that wasn't all I needed. Now when they and the soil conservation man come out here and talked to me and showed me and helped me how to do some of the things they had told me before, they put me to thinking. And when you get to thinking after you've done something, you get to feeling able, and when you feel able you can do lots of things. But there ain't nobody but me that's going to do it, and if I don't want to do it, I ain't going to do it. I just has to be willing and feel able and go to work."

Johnson, too, told how being taught new methods improved his farming. He told us that that year he had the best crop of green beans and tomatoes he had ever raised. He sold more than $2,000 worth of beans, and the buyers had no criticism of their quality. He said that he had read about insecticides and other matters, but he was never sure just how to go about doing some of the newer things. When asked how he had done so well this year, he told how Stan had come out and helped him get spray materials and prepare and apply them. He said when it was done that way he was sure it was done right. His pride in achievement was evident when he went on to say, "Why, two days after we sprayed the beans, I went out to the field and there was dead insects of all kinds, more different kinds than I ever knew existed. No sir, I never sprayed before; I just let them bugs eat all they wanted and sold the rest—about a hundred dollars worth a year." Although in 1933 we had not met Meeks and Johnson, we had met many farmers using the same practices and getting the same poor results.

As we began our trip through the Makanda Hills, we stopped at Carbondale to talk with R. E. Muckleroy of the Normal School (now Southern Illinois University), who taught various agricultural subjects. He suggested that we look at several places in the general vicinity of

Anna where fruit and vegetable production was important, along with some grain and livestock raising. There was little reaction and no encouragement from any of the people we talked with. A reasonably deep layer of loess soil east of Anna, on which there were some fairly good crops, made the area appear considerably better than we were seeking. As we zigzagged about through Lick Creek, Buncombe, Tunnel Hill, Vienna, Ganntown, Dixon Springs, Golconda, and many other places, we saw much evidence of low productivity and extensive losses of soil because of faulty tillage practices on the sloping fields.

Most of the homes where we stopped were in poor repair. The usual literature in the house was a mail order catalog, a copy of the local weekly paper, and *Prairie Farmer,* the universal farm paper in Illinois. Where there were children there were usually a few badly worn school books. There was little work being done on the farms, and most of our visiting took place on the porch of the house or in the shade of the trees about it. Moments of enjoyment were not entirely absent. Children, often with dirty faces and hands, scratched legs, stubbed toes, and ragged clothes, scampered after playmates, or sat in swings, or did some of the chores common on farms in 1933. Electric lines had not been built in rural areas, and there were few telephones. Rural delivery of mail served most homes, although the mail box was often "a piece down the road" from the farm home.

Most of the highways were not paved in Illinois in 1933, and only a small part of our trip through the Ozark Hills was on pavement. Most of our driving was done on dirt roads that were very narrow. In many places brush and tree limbs rubbed against the sides of the car, and so much red dust rose that we kept the windows closed in spite of the heat. Many of the bridges were narrow and rickety. We sometimes stopped to look at them to guess if they would support the car.

Ours was a seven-passenger contraption that exceeded the size of any car that had been seen in the villages. Men sitting on benches, which served as seats of learning in front of the stores, would stare in amazement as we drove up and stopped. Since thirst accompanied us throughout the trip, and since we remembered enough of our studies of bacteriology to avoid cistern water, we always stopped where we saw one of the universal emblems of free enterprise — Coca-Cola — to get a drink. There we would match pennies, with the odd man having the privilege of paying. This would amuse the storekeeper, and the two or more idlers sitting just outside or inside the entrance. These men constituted what we called the storekeeper's advisory committee. After they had watched the penny-matching episode, it was easy to start a conversation with them. When we had assured them we were not reve-

nue agents in search of moonshine stills, they might admit that drinking moonshine was more stimulating than watching it shimmer through the trees, and that "Grandma Jones' Corn Squeezin's" was at times real satisfying.

Conversation would then drift along about the weather, dogs, crops, etc., and we would then tell them of our purpose, inquire about the price of farm land, and try to get their reaction to the general plans being made and to laws enacted by the federal government. Usually they would admit they had been hearing something about what "them fellers in Washington" were planning, and that it might be all right. They had never been what would usually be considered prosperous, and the depths of a serious depression did not seem to mean as much to many of them as it did where the income from farming and other occupations had been much greater. Now someone was pleading their case, and they were developing the same reaction to their dilemma as the man who had been assaulted. Only when he heard his attorney plead his case did he realize how badly he had been beaten. They were beginning to recognize the justness in any effort to improve their situation.

Even though hardship had been the constant guest in many homes before the depression, the difficulties had now increased because many who had left to work in the cities were now back home, where they could live more cheaply because they could raise some of their own food. Many had kept ownership of the places they had left, for "the old folks needed a little place when they were left behind."

There was no official worry about an exodus from the farms in the 1930's. The anxiety at that time concerned the increase in the number of farms and in the farm population. These increases were taking place where the land was relatively poor and cheap, and the handicaps to success were greatest. The land was incapable of responding with any abundance to the rather feeble efforts, improper tillage, and lack of attention to the fertility needs of the soil. Profits were dependent, as always, upon what the farmers did, the amount and quality of their production, costs, and upon what was happening far away. There was little that anyone could offer except the hope that times would get better. Sympathy may be an indication of a noble character, but it is a poor stimulator of effort. Sensible concern for one's situation, and serious study of the possibilities of improvement are more likely to produce results. We found shallow smugness mixed with amusing banter a few times when we asked about the general character of the area. We were told, "This is a lot better country than up there where you fellows come from. Up there you have to have a good crop every

These two houses were typical of many on farms in the area chosen for the Dixon Springs Station.

year to get by, but down here we can get by with a good crop every two or three years. We've got lots less to worry about."

There are great catastrophes that bring sudden destruction and leave communities impoverished until rebuilt. But the poverty in Southern Illinois in 1933 did not arise abruptly. Hardwood forests once covered most of the areas we had visited. The removal of these timber resources provided opportunities for productive work and brought good incomes to landowners and others. General farming followed the clearing of the land. Lack of attention to the maintenance of soil productivity was accompanied by gradually declining yields of crops, reduced numbers of livestock and decreasing income. After two days we were hopeful, but not certain, that the situation was not beyond the stage where the people, with guidance, could do much that would benefit them.

Glendale to Robbs

On the third day, we spent the morning in the eastern part of Johnson County and in Pope County. We reached the Ohio River at Golconda at noon. There we had a brief session with the farm adviser, J. B. Andrews, and then returned westward toward Dixon Springs. This was an old meeting and picnic area that long had been in use by the people of the southeastern part of the state. We made a cursory inspection of the meeting and lodging facilities, and asked directions to Glendale.

Glendale is in a valley drained by Hayes Creek, which flows in a westerly direction about five miles north of Dixon Springs. A few rods west of the crossroads there was an iron bridge with a plank floor. Just beyond the bridge was Glendale, which consisted of several houses, a church, and a general store. The store served most of the commercial needs of the community, and included the post office. As we entered the store, a woman was trading for groceries with a small basket partly filled with eggs. We drank the usual Cokes, chatted with the storekeeper, and asked where we might find a man named Will Lawrence.

About a mile west of Glendale, a lane led from the road north to the Lawrence homestead. We turned into the lane soon after we had crossed a very small bridge, the loose planks of which served notice that we were passing by. The south wind blew the great cloud of dust we had kicked up across the field toward the house. Nearby were a few large trees, and we drove into the shade and stopped. We got out of the car, and sat down on some large rocks to wait for the man who was driving his team toward us. When he reached the shade he stopped

This road just south of the Dixon Springs Administration Building was typical of 1935 roads. Highway 145, completed in 1953, replaced this road.

the team, dropped the lines, left the horses to themselves, walked over toward us, and expressed his welcome with a cordial "Howdy."

"Are you Will Lawrence?" asked H. P. Rusk after we had responded to his greeting. Rusk was the head of the Animal Husbandry Department of the College of Agriculture at Urbana, and was in general charge of our trip. When there was an affirmative answer, H. P. introduced W. L. Burlison, head of the Department of Agronomy, and me. There were some inconsequential remarks, during which time H. P. filled his pipe, and we again sat down on the rocks. After a few violent puffs on his pipe and a prolonged "Er-r-r," H. P. told how a number of years ago a man by the name of L. A. Snow of Vienna, Illinois, had suggested to Dean Eugene Davenport that the Agricultural Experiment Station should secure some land in the southern part of the state, and undertake some studies to help farmers conserve their soils and follow more productive and profitable practices. Snow had mentioned how the soil losses were becoming serious, and different and better farming methods were needed. Snow's letter had been brought to the attention of several advisory committees of the college. These committees had recommended that the suggestion of Mr. Snow should be followed as soon as funds were sufficient for such a purpose. Rusk then explained that our trip had been proposed by H. W. Mumford, dean of the College, who along with other members of the faculty and staff had learned of the plans under Roosevelt's "New Deal" to develop a variety of programs to counteract the depression. Part of the plans for agriculture called for the purchase of large areas of marginal and submarginal lands. Rusk said it seemed likely the federal government would buy considerable acreage in Southern Illinois and establish a national forest. This would mean many farmers would no longer operate their farms, but would sell them to the government and then seek work elsewhere. The government would probably aid in moving them and in finding work.

H. P. continued as he refilled his pipe, saying that we thought the government might set aside some of the land it would buy to be used as an experiment station by the University's Agricultural Experiment Station. It was likely that some farmers would not want to sell, and those who stayed on their farms would want help to do a better job. He said he believed that demonstrations would provide one of the best teaching methods, and if we had about a section of land we would be able to make studies of the best practices for farmers to follow. We thought we might be able to get the cooperation of the United States Department of Agriculture in any such work, and we had been sent down here to look over the country and try to select a suitable place

for such work. Rusk said he would like to hear Lawrence's views on how people were getting along, whether they needed help, and whether what we planned might be of value to some of them. He said we would appreciate any thoughts Lawrence had about such matters, whether he thought many farmers would sell, and whether those who did not sell would welcome help. We wanted to know what he thought of the idea, and of the suitability of this area for such a program.

Lawrence shifted his buttocks as if to find a softer spot on the rock. After a short silence he spoke with a good deal of conviction, and since he had never had to fill time in a seminar, he didn't use a lot of excess words. He said, "It's true the last few years have been hard years in which to make money. There ain't much wrong around here except that everybody needs more money. There won't be much profit in farming until crops and stock are worth more than they bring now. There is some pretty careless farming done around here just like there is in most places, and some of the farms are badly gullied and won't grow much except a poor crop of poverty grass, saw briars, and sassafras and persimmon sprouts. But there are a lot of farms around here, and while they are pretty badly run down, they are like the fat woman. Even after she had lost her fat there was a lot of good left."

At that we laughed, and Burlison said, "Good. I'm glad you're an optimist. From what you say, I gather that you think with better prices and management it would be possible on the better farms to make a good living. Is that right? Would you sell?"

"Well, I guess whether or not I would sell would depend a good deal on the price," was Lawrence's reply to Burly's question. Then he continued thoughtfully: "You said I was optimistic. Well, I might as well be. As far as I can see, it seems that most people make a living by using what there is wherever they happen to be. Some do better than others. Some farmers don't do very well even in boom times and on pretty good farms. People just don't all want or need the same things to be satisfied.

"Now, you asked if I would sell, and I said it would depend a good deal on the price. But I've got a pretty fair piece of ground here, and with good weather and better prices, I think I can make it all right. But if you fellows get set up around here and can show us how to do better, that will be fine if it don't mean working too hard when it's so awful hot.

"Of course, we can get lots of suggestions now. A lot of men come along and talk at Farmers' Institutes and tell us about a lot of things we ought to do, but none of them ever tells us how to get the money to do them. Why, last spring at the institute at Golconda, there were

four speakers on the program but only five people went to hear them, and one of them was the farm adviser who is supposed to know how to help us grow better crops, feed the pigs cheaper, make them grow faster, and help us control disease and get rid of varmints. He's as full of ideas as a skunk is of perfume, but he's got four or five hundred people hollering at him for help to do everything from culling the old hens to setting up cooperative marketing associations, and from cutting the tails off lambs to keeping the Hessian fly out of the wheat. He knows a lot, but he doesn't give away money, and he can't help anybody that don't want to be helped. A lot of us are just too well satisfied with what we are doing. The farm adviser gets all over the county, and maybe you should talk with him. If you know how to do a lot of things without money, you've found a fertile place to go to work. A few quarters and half-dollars make a lot better sound in a fellow's pockets than he hears from some rusty nails, old screws, and a plug of tobacco."

While we had been talking, the shadows from the trees had extended much farther down the gentle slope. Lawrence's horses were rested, the rocks had grown harder, and to stand was a relief. As we stood up, a few buzzards circled high overhead, and there were a few wisecracks about which one was so nearly dead as to attract birds that lived on carrion. Lawrence told us how we could get to Harrisburg by going on west through Robbs and Simpson. When we left the grove, none of us thought of the many times we would pass it during the next 25 years.

As we drove west, we passed a few good houses and then crossed over the Edgewood cut-off of the Illinois Central Railway on a rather substantial wooden bridge. The trains passed through a deep cut at this point, and as we crossed, the engine of a slow-moving freight train sent billows of smoke and cinders into the car. Just a few feet beyond the bridge was the eastern end of the village of Robbs. We were on the main street — the only one. On the north side were a few small business buildings, the first of which was a garage with the usual hand-operated gasoline pump with a ten-gallon glass bowl on the top. H. P. was driving, and he stopped the car at the pump. As he turned off the motor, a medium-sized, portly man came out of the building and asked if he could help us. Rusk said: "Fill it up, if you've got that much gas." I think the man was a bit doubtful when he noticed the size of the car. He was A. L. Robbs, who, along with the Standard Oil Company, operated the only service station in town. When he had pumped the bowl full, he emptied it into the tank of the car, refilled the bowl, and when it was drained again, the car tank was full.

While this was being done the usual type of conversation took place between buyer and seller. When Rusk asked how business was, Al Robbs replied with the characteristic bit of humor we enjoyed on so many later occasions.

"Well," he said, "I'll tell you. Around here it's about like the storekeeper over in a small town in Missouri wrote on the sign he put in the front window of his store. It read, 'Nothing sold on Sunday and damn little any other time.' Some of the young fellows have Model T's, and when they are getting ready to go sparking on Saturday night they might stop for gas. But some use a horse and buggy. Either way the result is the same, and there's always more kids to go to school."

After a few more general remarks and a few laughs, Burlison said, "We were just talking with a man between here and Glendale, who told us that Glendale was an old village. But this is a new place. How did this place come about?" That was an easy question for Robbs, for he was the builder and the proprietor of most of the places in the town. He and his family moved there, and made it their home and headquarters when he had to take over as contractor for another person who had found the job of building a portion of the railroad too much for his talents and equipment. It was rugged and difficult work. Besides the cuts and fills, there were three tunnels in the area; one a short distance north of the village is the longest (6,985 feet) in Illinois. From the southern end of that tunnel there are several bridges and extensive fills across the lowlands that lead to another tunnel 2,600 feet long. The construction work on the railroad was completed in 1928, five years before our visit, but the headquarters Robbs had built served as the home office for A. L. Robbs & Son (Buell) while they were engaged in some construction activities in other states. These activities were discontinued after the son was injured in an automobile accident.

The Robbs family, with the help of some of the other residents, operated a garage, blacksmith shop, and Ford agency; sold farm machinery; and ran a general store, an insurance agency, the post office, lumber yard, telephone exchange, the local light plant, a small grain elevator, a flour mill, a small restaurant, and a one-day-a-week barber shop in one corner of the cafe. They owned a race horse, and followed baseball and other sports. They had built a grade school with a small gymnasium. From a safe in the garage they did a good part of the community's banking. They would buy, butcher, and process some of the animals that the farmers sold or that the Robbs themselves had raised on some of their own farms. Frequently, they would send a truckload of cattle or hogs to the National Stock Yards in East St.

Louis. Several of the tracts of land they owned were importantly related to the developments that were to follow under the sponsorship of the University of Illinois and the United States Department of Agriculture. A. L. and his son were leaders and advisers for many of the farm people. Because of those dealings and relationships, they played an important role in the work of the University until the close of the period covered in this story of the Dixon Springs Station.

Rusk paid for the gas, and then asked if we could get a cold drink. A. L. took us into the store, which was only a few steps from the garage, where we each picked up a Coke and opened the bottles at an opener on the wall. Soon each of us, with a bottle in one hand, was walking about the store inspecting the foods, tobacco, pipes, men's and women's wear, hardware, etc. There was a small meat case, a counter, and a cutting block in the back of the store, and an old refrigerator car from the railroad about six feet from the rear wall. This served as a storage room for meat. Fresh beef and pork were sold or served in the cafe. Some cured meats were received once a week from packing plant distributors serving the area. Most farm families and some who lived in the village had a flock of chickens, but the local poultry business was not large. Many people brought eggs to the store where they were traded for other items. The eggs were picked up once a week by a dealer who took them to larger towns and cities, where they were generally sold to egg-breaking concerns because of their low quality. Often the dealer would have several crates with him and would visit farms that had chickens or other fowl for sale.

As we wandered about the store, H. P. was reminded of another store about which he had heard. As H. P. told it, a cat and a hen made their homes in the back of the store. The hen laid her eggs on the top of a half-filled bean sack. The storekeeper did not gather the eggs, and when several had accumulated, the hen decided to hatch a brood of chicks. The cat had taken care of preliminary activities associated with the production of kittens. It happened that the chicks were hatched and the kittens born the same night in the back of the store. The storekeeper learned of these happenings when he opened the store in the morning. He decided to play a trick on the village dullard who came into the store each morning and made a complete tour of it by walking from one end to the other and back again. On this particular morning that H. P. was recalling, the storekeeper, when he saw the young fellow coming, hurried to the back of the store, removed the newly-hatched chicks from under the hen, and placed the new-born kittens under her. As the youth returned from his trip to the back of the store, the keeper asked him if he noticed anything new. When he

said he had not, the keeper said "Come on back, I want you to see something the old hen hatched."

They went together. The storeman told the witless one to lift the hen and see what she hatched. He did so and stared in amazement at the kittens. The keeper asked: "Well, what do you think of that?" The young man shook his head and said, "I don't think I'll eat any more eggs."

With that we went back to the garage, as Rusk remembered he needed a receipt for the money he had spent for gas if he was to be reimbursed. Robbs went to his roll-top desk, found a receipt, and filled it out. On the desk were copies of the St. Louis *Post-Dispatch* and of the Golconda and Vienna newspapers, and a wall telephone above it. One soon got the impression that Robbs, although he had little formal education, was a shrewd and intelligent businessman nevertheless. He was about five feet, seven inches tall and had the appearance of a successful contractor or farm operator, who possessed a lot of plain "horse sense" combined with a rather jovial but determined way of doing things. None of us appraised him as being especially benevolent. He gave straightforward answers, and his energy and general characteristics seemed to indicate that he was a good judge of men and a natural leader of them.

As we were leaving, the telephone rang. Robbs reached up, removed the receiver and said, "Hello." This was followed by "Hey? Who? I can't hear you. Oh. Long distance, eh? Where? Who did you say? Rusk? Yeah, he's here." He handed the receiver to H. P., who took his cue from the way Robbs had yelled and spoke with so much emphasis that it must have broken a connection somewhere along the line, for he heard nothing from the caller. Soon the local operator said she would try to get the caller back on the line, but she didn't succeed, and we left for Harrisburg with instructions that if the call came again, it would be transferred to the Horning Hotel there later that night.

That first experience in telephoning was repeated many times in later years, as we made use of the telephone at the Robbs garage or at the local switchboard. When the wires were wet and in contact with tree leaves or limbs, it was often necessary to drive about 15 miles to Vienna or Golconda to use the telephone. For many years there were no telephones on the station grounds, and the four miles from the Administration Building to Robbs was traveled frequently to respond to a call relayed from Robbs by whoever was within hailing distance. When usable service was installed about 15 years later, it marked a real achievement.

On the Way Home

There were no new hotels in Southern Illinois in 1933, and the few motels consisted of nothing more than little cabins, usually in a small group of trees, with facilities that seemed as ancient as the purposes for which they were used. The Horning Hotel in Harrisburg was one of the better-known places. It was a long, narrow, three-story frame structure in which some ropes were provided for the use of guests in case of fire, which always seemed to be a likely possibility to me. The lobby was large and had some heavy, leather-upholstered chairs, a few oak rockers, a few straight chairs, and a writing desk with ink and pens that were as gooey and scratchy as the 1933 variety provided by the post offices. The stairs squeaked, and there was no wall-to-wall carpeting. The plumbing was adequate, and noisy enough to make all hotel occupants aware of its use. A large dining room occupied more than half of the first floor. The meals were good, with steaks and roasts for dinner and lunch, and many items from eggs and ham to giblets and grits for breakfast.

Rates were higher than at other hotels where we had stayed on our trip. On a later trip H. P. complained that the six-dollar charge for a room was more than the Stevens (now the Hilton) in Chicago charged. Mrs. Horning was on hand to take the payments when guests were leaving, and H. P. had no comment when she said, "That may be. They went bankrupt. I don't intend to." If he had any feelings about the matter, they vanished when Mrs. Horning opened the cigar case and told each of us to have a cigar. Burlison didn't smoke, so H. P. said he would take Burly's, too. But Burly said, "Oh no you don't; Bill has just as much right to my cigar as you have, so you can match pennies for it." We did. I won. But Rusk could smoke a cigar faster than anyone else, and he was through with his when I had mine about half smoked, so I gave him the one I had won. He was my boss.

In 1933, air-conditioned hotels were not found in Southern Illinois, but we had an otherwise comfortable night. We checked carefully to be sure we had not left anything before we departed. I always did that, but several years later, after I had spent a night or two at the Horning, I was unable to find a pair of trousers when I arrived home. I wrote to the hotel inquiring about the lost trousers. The reply from Mrs. Horning was simply, "Nobody left here without his pants."

Conversation on the way home pertained chiefly to the places we had visited, the general economic situation, and events that had occurred since Southern Illinois was first settled and even earlier. Although we had each made separate trips to Southern Illinois before

1933, none of us had focused our attention on any aspects of the region as we had during the last three days. Because there was much about the area I did not know, I had taken a few publications that contained considerable historical and statistical information, and on several subjects I shared such information with H. P. and Burly.

Once I asked my colleagues if they knew how many miles it was from the northern boundary of Illinois to the southernmost point of the state at Cairo. Rusk guessed 400 miles, saying, "I know the southern end of Illinois is farther south than most people think. It's only a short distance from Illinois to the southern boundary of Kentucky. Illinois is almost as long as Missouri and Iowa together. Few states have more length north and south than Illinois."

"You were within 5 percent of the correct distance," I said, "which is 379¼ miles. No wonder there is so much variation in the climate, soils, crops, and trees in Illinois."

I told them that Pope County was named for Nathaniel Pope who was Illinois's Territorial Delegate to Congress, and that he was the one who induced the government to move the northern boundary of the state from the southern tip of Lake Michigan about 60 miles north to its present position. "If it had not been for Mr. Pope," I said, "the Century of Progress being held this year would have been in Wisconsin rather than in Illinois."

Burlison said, "Well, that makes two times that Illinois got the best of Wisconsin. The other was when the glacier brought a lot of good soil down from the north."

I had collected some information about the area which I continued to distribute to them. I remarked about the few bridges over the Ohio River into Illinois, and said that the Golconda ferry must have been one of the first ferries across the Ohio into Illinois.

I read aloud from a book I had. "The area in and around Pope County attracted many people because of its accessibility as it lay between the confluence of the Ohio and Mississippi Rivers. . . . Major James Lusk learned about the area and after settling near the present town of Golconda had considerable influence on later developments." Lusk had come to Kentucky from South Carolina, and although he had secured a permit from Kentucky to operate a ferry, he moved to Illinois to the north bank of what is now known as Lusk Creek, because Kentucky permitted slavery. "He failed to get a permit promptly to operate the ferry from the Illinois side of the Ohio, but he operated anyway. He was among the first settlers in the area, and in 1798 he built one of the first houses. The route became a main-traveled one for the day and time, and some notable people, including James

Audubon and Theodore Roosevelt's grandfather, traveled that way and used Lusk's facilities." Lusk cut a road 6 feet wide from the Illinois landing straight west to the Mississippi River, probably in the same location as Route 146 over which we had travelled part way from Anna to Golconda. The banks of the river shifted from time to time, and the Lusk house collapsed into the Ohio in 1833.

I reminded my companions that people had misfortunes in Southern Illinois a hundred years ago. Burlison said that calamities of sorts had been the lot of people at all times and anything we might do would never be any assurance that they would not continue.

I told them about another story that must have happened along Lusk's road. During the winter of 1838-39, several thousand Cherokees were being driven from the Smokies to Indian Territory. Very cold weather struck them when they were about halfway across Illinois, and almost 1,600 died in a few days. I said that I had never known that before, and thought that if we undertook work in Pope County we would have a lot of history to learn.

The topic of climate and rainfall received our attention next, and I asked what the annual rainfall was in Illinois. Burlison said he thought it was at least 40 inches. He said that Southern Illinois often received more than the rest of the state, but it might vary from 30 inches to more than 60 inches. He told me, "Bill, you must remember that the production of crops doesn't depend entirely upon the amount of rainfall, but upon its distribution during the year and very markedly upon the water-holding capacity of the soil. Many soils in Illinois are very poor in that capacity."

"Okay," I said, "I'll remember that, but I can't use it now as I want to do a little figuring. Burlison says the yearly rainfall is about 40 inches. You gentlemen seemed surprised and worried about the erosion in Pope County, but it doesn't seem surprising to me. Forty inches are 3⅓ feet. I just told you that Lusk reached Illinois in 1798. This is 1933, so it has been 135 years; 135 times 3⅓ feet is 450 feet of water, and if half of it soaked into the ground, 225 feet ran off. No wonder there is erosion. Since Columbus discovered America 441 years ago, more than a quarter of a mile of rainfall has fallen here. In 1,933 years 6,443 feet or almost one and a quarter miles of water has fallen. It's a good thing water runs downhill."

I had thought to make some calculations that neither Rusk or Burlison had made, and I felt that I had done a good day's work. Then Burlison said that for that much rain to fall there had to be more than that amount evaporated from the seas, lakes, and other bodies of water, and transpired into the atmosphere by plants and animals. Since not

A damaged Southern Illinois area in the 1930's; rainfall can be destructive as well as beneficial.

all of the water in the air that passes over Illinois becomes precipitation in Illinois, it means that there is much more water transported by air across Southern Illinois than is carried by the rivers and streams.

Burlison said we should not forget that another very important factor in the rainfall which has an important relationship to erosion is the force with which the drops strike the ground. On bare ground, large drops will make splashes up to a height of 2 feet or more. This, of course, loosens a lot of soil that is carried off by the water. An inch of rain over an acre of ground weighs more than 100 tons, so it is not surprising that someone has stated that as much as 40 carloads, probably 1,000 tons of soil are carried past Memphis, Tennessee, by the Mississippi each hour from the states drained by it and its tributaries. He said it was no wonder we can feel at home in the Mississippi Delta country; we stand on Illinois soil.

We had arrived in Urbana. Rusk said: "I'm glad we're back home before it is all gone. And it looks that we will have lots of work if we get some land and start to develop a system of farming that will save soil through the control of erosion. But the people down there will have to do the work, and they won't do it unless we can show them they will be better off when they have done whatever is necessary."

Wheels Begin to Turn

On August 22, 1933, a few days after we had returned from our journey into Egypt, H. P. Rusk wrote the first letter of what was to be a rather voluminous, and sometimes confusing and frustrating, correspondence with representatives of the government in Washington, D.C., and in regional offices. Addressed to Secretary of Agriculture Henry A. Wallace, the letter directed the Secretary's attention to an enclosed proposal "for pasture investigations to be carried out jointly by the University of Illinois and the United States Department of Agriculture." Rusk went on to outline the possibilities[1]:

There are large areas of marginal and submarginal land in Southern Illinois which have presented many perplexing problems ever since this territory was settled. . . . [There] are large areas of tax-delinquent marginal land on which the inhabitants in normal times were able to eke out a bare existence. These lands are badly depleted in fertility, and erosion has become a serious problem. . . . [P]robably one of the most

[1] For the full text of the letter and project outline, see pages 147 to 150.

promising research and demonstration projects that could be carried on in that district would be a pasture project for cattle and sheep production. We believe that a tract of 2,000 to 2,500 acres could be secured that would be representative of the hilly, upland, and swamp areas of Southern Illinois; and that the pasture problems in this area would be representative of the pasture problems in large areas of Southern Ohio, Southern Illinois, Western Kentucky, Southern Missouri, Northern Arkansas, and possibly portions of Tennessee. So far as I know there is no comprehensive pasture project such as this will be anywhere in the southern Corn Belt, and it is our belief that this is one of the most urgent needs of the whole area.

Rusk then reviewed earlier recommendations by individuals, and by two advisory committees of the Agricultural Experiment Station, and mentioned that the lack of funds had prevented any work being done. He then explained to Secretary Wallace:

We believe that part of the $3,300,000,000 provided for public work and for emergency conservation projects might be used legitimately and profitably for fencing, clearing, terracing, seeding, and possibly other labor-consuming operations in establishing a project of this sort. . . . We feel that desirable acreage could be secured somewhere in this district at a very reasonable cost.

The two-page plan which Rusk enclosed with the letter was in part a repetition of items mentioned in the letter, with more detail of some of the features. It was devoted both to the development and use of practices that would reduce soil erosion and improve the production of pastures and feeds for livestock, and to the use of the poorest and roughest portions of the proposed 2,000 acres to demonstrate reforestation under modern, improved methods. There was mention of the general management of the lands, and it was suggested that some items might be provided by the state if land could be obtained through purchases in connection with the proposed forest reservation. The plan called for the USDA to supply livestock and items such as seed and fencing. Labor and operating personnel would be furnished jointly by the University of Illinois and the USDA. There was the usual note of optimism to the effect that the farms should be largely self-supporting after they were established and in operation. The income would be placed in a separate account and used as a revolving fund by the University.

Rusk made no definite suggestion about the location which the

committee thought most suitable, as it was hoped the federal agencies might be more generous if they were given considerable opportunity to advise. With more than three billion dollars to be expended, we were reasonably sure that federal departments other than agriculture would become involved in any such proposed undertaking. Public works, relief, conservation, resettlement, and unemployment agencies soon became entwined in any consideration of the use of the money. It soon became necessary to inform many other government people in order to have any degree of harmony.

E. W. Sheets, with whom many of us were acquainted, was Chief of the Animal Husbandry Division of the Bureau of Animal Industry of the USDA. Rusk sent Sheets a copy of his letter to Secretary Wallace, but he had first spoken to him so Sheets would know how important it was to use great discretion in going through channels to solicit support. On October 12, 1933, Sheets wrote to Rexford G. Tugwell, the Assistant Secretary of Agriculture, saying that the proposed project

is urgently needed to give us an opportunity to show what can be done on an extensive and efficient scale to reduce erosion and control runoff in a relatively short time and at minimum cost on poor, rolling land which is or recently has been in cultivation.

On the proposed tract of land many newly proved methods of control and pasture management and suitable plants which are found desirable for grazing, can be tried out on a scale large enough to meet the requirements and yet be practical in their application. Results of such trials are far more convincing to farmers than are the results from small plots which must be used at other state or federal stations designed for such studies.

Tugwell was in charge of the resettlement program, which was necessary because of the large number of land purchases. He was energetically supported by the President's wife. In an article in the *Chicago Tribune,* dated April 22, 1935, he is quoted as having said that the unemployed represented "the greatest of our potential resources" and suggested that if their labor had been used during the depression, every family in the country could have been given a brand-new $5,000 house, or the entire railroad, industrial, and utility properties could have been scrapped and rebuilt on modern and more efficient lines. As a result of the enormous increase in our industrial efficiency, he thought many people no longer needed for the usual types of work should be shifted to do necessary public work, such as we were proposing.

Hugh H. Bennett was the Director of the Soil Conservation Service of the USDA, and thus it was both helpful to us and satisfying to him when his support was enlisted. Dean Mumford wrote him on October 21, 1933, outlining the importance of the proposed work for Midwest agriculture, and for the work of his agency. He was very interested, and came to Illinois for a visit to study some of the proposals.

Later, Secretary Tugwell, on November 20, 1933, wrote to Harold Ickes, Secretary of the Department of the Interior, which was responsible for many of the activities for which $3,300,000,000 had been appropriated. Many of the projects had been taken through the conception and gestation stages, and had attained something akin to adulthood in just a few months. Almost half of the federal fiscal year was past when Mr. Ickes was informed about the Dixon Springs project, so like the runt in the litter of pigs we could not expect to do any better than to get hold of a diminutive hind teat. Tugwell wrote Ickes that the USDA had

tentatively approved the location in Southern Illinois of a correlated project for the study of soil erosion, reforestation, and livestock production into a system of farming involving the use of pastures and forage crops. This is the only project of its kind anywhere in this or any other country for study of this complex problem.

The demonstration will show how such rough land can be taken out of cultivation and harvested crops, terraced, seeded to pasture, and grazed by livestock, thereby conserving what value the land has and keeping it out of the rivers.

The proposed comparisons of various kinds of pastures and pasture treatments will give information which is not and will not be available elsewhere on the yields of forage measured in terms of livestock products, and the effects of various rates and methods of grazing on soil erosion and runoff.

The approval of the location did not entail any difficulty, for with the decision to establish the Shawnee National Forest, there would be need for work by the farmers who sold their lands for such use. The forest was to be made up of two large tracts, one lying along the Mississippi River on the western side of the state, and the other along the Ohio River on the east. Since the area in which the forest would be established involved about 800,000 acres, the assignment of 2,000 acres for another purpose was not of much significance in reducing the forest acreage. The Forest Service had been organized many years

earlier, and was staffed with competent and experienced men. Before the tract could be assigned to the University of Illinois, there were many letters, telegrams, telephone calls, visits to the area, and trips to Washington, D.C.

I had little direct responsibility for any of these matters, as they were all handled by Dean Mumford or by Rusk, although I did make quite a number of trips to the site we had chosen, and was informed from time to time about progress, or the lack of it, with federal agencies. Rusk had occasion to go to Washington for conferences about the project. One matter was the acreage that would be allotted. When Rusk returned from the conference about the acreage with Secretary Wallace and others, he was as full of cheer as is claimed for what is bottled in bond in Kentucky. He had reason to be happy. He sought about 2,000 or 2,500 acres; the allotment was for about 16,000 acres. It was to be used for and designated as a Pasture and Erosion Control Demonstration Station, but such use was not to start right away. Detours may be a sign of progress, but sometimes rules, regulations, and bureacracy seem to make slaves of the free. Still, achievement would perhaps be flavorless without frustrations.

An Agreement

After the outlining of the limits of the district within which the station would be established, the remainder of 1933 and much of 1934 was devoted to the development of a Memorandum of Understanding between the U.S. Department of Agriculture and the University of Illinois. These were the main parties, although the Department of the Interior was also concerned. Agreement was finally reached, and the project was to become effective on July 1, 1934. The first signature on the document was that of H. W. Mumford, who had been authorized by the President and the Board of Trustees of the University to sign as Director of the Agricultural Experiment Station. The date of his signature was July 5, 1934.

The copies were then sent to Washington, where D. A. Spencer, Acting Chief of the Division of Animal Husbandry, and John R. Mohler, Chief of the Bureau of Animal Industry, both signed on July 21, 1934. Three days later the chief of the operations division of the Soil Conservation Service of the Department of the Interior, W. A. F. Stephenson, signed. There were no more signatures until September 11, when the Acting Chief of the Forest Service, L. F. Kneipp, added his signature. K. A. Ryerson, Chief of Bureau of Plant Industry, accepted

the Memorandum on September 13. The agreement carries the signature of T. A. Walters, First Assistant Secretary of the Department of the Interior, but there is no date accompanying it. The last name was that of M. L. Wilson, who was Acting Secretary of the Department of Agriculture, and the date was October 4, three months after Mumford's signing.

Copies of the Memorandum were then returned by Mr. Spencer to Dean Mumford on November 15, 1934. In his letter of transmittal, Spencer said that the Memorandum was for "the maintenance and operation of the cooperative field station to be known as the Dixon Springs Station, located north of Dixon Springs, Illinois, within the extended boundaries of the Shawnee National Forest (AH52.1114.3)." Mumford then forwarded the agreement for signature by A. C. Willard, President of the University, and Sveinbjorn Johnson, Legal Counsel. The agreement was then considered to be in full force six months after we had expected it to become effective. The mills of the gods are not unique in grinding slowly.

The Memorandum contained a number of provisions defining the privileges and responsibilities of the University and of the USDA. The Director of the Illinois Agricultural Experiment Station was to be the administrative head. He was to appoint a superintendent after consultation with the Chief of the Bureau of Animal Industry, and with the Director of the Soil Conservation Service. The superintendent was to be the local representative of all cooperating agencies, and oversee achieving the objectives of the station regarding the production of livestock, pasture improvement, erosion control, and "other land-use problems including afforestation." He was to report to the director, or to someone appointed by the director.

The director was authorized to designate any lands within the area as forest lands if the Forest Service agreed, and such lands would then be administered as a part of the Shawnee National Forest. Other lands within the area "shall be under the complete charge of the director and be administered by him for the cooperating agencies signatory to this agreement, so long as this agreement shall remain in force."

In addition to the general overall project, subprojects were to be drawn for each separate investigation, with the leader or leaders of each indicated, together with detailed plans, estimated costs, source of funds, and "other pertinent information." When the subprojects were approved by the three men designated as station leaders, work could be initiated under the direction of the superintendent. All original records were to be kept at the station until the work was completed and a final report had been made to all cooperating agencies. The

director could have duplicate copies made, which then would be sent to Urbana for storage in fireproof vaults; but the original records could not be removed from Dixon Springs without the approval of all cooperating parties, and they were to be available to all of the various subproject leaders at all times. Any publications were to recognize the cooperative nature of the work, and all manuscripts were to be submitted to all parties concerned with the subproject. If some cooperator did not wish to publish, the other might submit a manuscript for publication, but it could not be published without the approval of at least two of the station leaders.

The major portion of the land for the station was to be purchased "under the program of the submarginal land committee of the Federal Surplus Relief Corporation." Land purchased for the Shawnee Forest might be assigned by mutual consent to the station. There was a provision for the inclusion and use of any land that might be bought by other cooperating agencies.

The Memorandum provided that $40,000 be available through the Animal Husbandry Division of the Bureau of Animal Industry for improvements, such as "fencing of suitable areas for grazing studies, temporary buildings, barns, sheds, laboratory, stock scales, a water system, and the purchase or erection of a house for the superintendent, and two to four cottages for laborers." The Soil Conservation Service was to make $27,000 available for terracing, stopping gullies, improving drainage, purchasing seed, and purchasing and applying fertilizers necessary for the establishment of pastures. This money could also be used for work in preventing erosion, effecting flood control, and installing instruments and equipment to study runoff and soil losses. Most of such work was to be done by an Erosion Control Camp that had been promised for the area. The workers could do other work, too, such as operate a limestone crusher that might be located where there was a suitable outcropping of limestone rock. The Forest Service would build all-weather roads from near Dixon Springs on Route 146 to Glendale, and also from a point near Robbs past Glendale to the Waltersburg-Eddyville road.

The salary of the superintendent was to be paid equally by the University and the USDA. Scientific personnel were to be furnished by the cooperating agencies. Receipts from the sale of livestock could be used to employ labor, but not to support the Erosion Control Camp.

The Bureau of Animal Industry agreed "to furnish and deliver to the Illinois Experiment Station for experimental purposes such animals as may be mutually agreed upon hereafter and as may be required in the conduct of the experimental work." The Bureau also might with-

This house was used as an office by the Land Utilization Division of the Resettlement Administration while it was active in Robbs.

draw animals, "except those that may have died from unavoidable causes, and those which might have been sold and the money received transmitted to the proper federal agency." The animals would remain the property of the agency that provided it, but the progeny would become the property of the Illinois Experiment Station. Similar provisions related to other property. The total to be expended by the Bureau of Animal Industry for the fiscal year ending June 30, 1935, would not exceed $50,000, and expenditures after that date would be determined each year in advance.

The Memorandum was to remain in effect after June 30, 1935, if this was agreed to in writing 30 days "before it would otherwise expire." It could not be renewed annually beyond June 30, 1945, unless all agencies agreed 90 days prior to that date.

Even with the late signing of the Memorandum, it was thought significant work could be started in the spring of 1935. The securing of options to buy land had begun in late 1934.

Meanwhile, the Illinois Rural Rehabilitation Corporation had been organized under the laws of Illinois, and was cooperating with the Resettlement Administration in its efforts to find work for people who were living on small marginal and submarginal farms. Land purchases for the Shawnee Forest would mean a large movement of people, but some would be needed to work in the forest. Since the area around the village of Robbs and between Robbs and Glendale comprised relatively better land, some of this was bought for use as future homes for local families. Land lying mainly east and south of this area would be bought for the station.

Of the more than 2,000 acres in the resettlement area, 1,346 acres were bought for $48,457, with the price ranging from $10.39 to $57.09 an acre. The money for these purchases came from an appropriation of $25,000,000 set aside by the Surplus Relief Corporation to buy land. This land later became part of the Dixon Springs Station when the Resettlement Administration gave up its plans to resettle people who had sold their farms.

Before that decision was reached, a great amount of work had been done by resettlement and rehabilitation organizations in the development of plans for the use of the land and the layout of roads and facilities. There were many house designs together with a quantity of land, depending upon the number of people in each family, their ages, standard of living, garden area needed, number of chickens, pigs, and cows, and buildings to house them. All the plans were drawn with due consideration to topography, drainage, sanitation, general accessibility, and anything else that might seem pertinent. Most of this was done

during 1935 and early 1936. The plans were then submitted through various regional offices en route to Washington for approval. Since the University was not interested in this work, except as a matter of general interest or curiosity, it was never asked for its approval, and only assisted with the discontinuance.

Cancellation of the resettlement plans caused some new problems, since the Resettlement Administration did not have qualified staff or suitable equipment to operate the lands, nor was it authorized to do so. Because of this, the University was asked in the spring of 1936 to manage the area.

In a letter to L. E. Sawyer, an Assistant Regional Director of the Resettlement Administration, Dean Mumford wrote on April 23, 1936, that he would recommend leasing certain lands so that some experimental herds and flocks might be started. Sawyer replied that the Resettlement Division considered current plans for the resettlement area to be "economically unsound," and that those lands were recommended to be added to the area being developed by the Land Utilization Division. Sawyer wrote that he thought it would be desirable for the Experiment Station to

prevent these lands from lying idle for the present cropping season, and possibly prevent a large amount of criticism that might be directed either at the State Corporation or the Resettlement Administration for permitting crop lands to lie idle and grow up into weeds.

Before this land can be turned over either to the University or to an individual, it is necessary for us to have a temporary cropping agreement for the land. It is our hope that the Agricultural Experiment Station can see its way clear to sign a temporary cropping agreement, as that would insure their proper use for the coming crop season. Inasmuch as the recommendation to abandon the original plans for the development of this area was made by our Washington office some two months ago, it is obvious that any action taken by the University with regard to a temporary cropping agreement for the 1936 season can have no bearing on that decision. The signing of such an agreement should in no way influence the final decision with regard to the ultimate use of these lands.

Dean Mumford did not welcome this change in policy. He wrote to President Willard that he doubted the "advisability of undertaking the control of lands of the Robbs Resettlement area under a . . . cropping agreement." He said that the lands had been purchased for a dif-

ferent purpose, and though the federal authorities had changed their minds,

there still remains enough uncertainty about the final disposition to cause us to hesitate about accepting any responsibility for this area, unless it is the clearly expressed wish of the Resettlement Administration that the University assume temporary supervision of these lands. It must be distinctly understood that if the University should, at the behest of the Resettlement Administration, enter into a temporary cropping agreement with respect to lands in the Robbs resettlement area, such agreement should in no way commit the University to the support or non-support of any particular plan or policy for the ultimate disposal of these lands. The University has to date kept clear of any responsibility in this matter and it is our wish to avoid even the appearance of accepting responsibility for a problem we had no part in creating.

Almost three years had passed since our visit to Egypt in 1933, and here was the Director of the Experiment Station now writing to the President of the University that some new agreements should be signed, since the Memorandum of Understanding, signed to take effect on July 1, 1934, was of no validity, because the Soil Conservation Service had been transferred from the Department of the Interior to the Department of Agriculture. This transfer made it impossible to continue under the old form. Now two new agreements were necessary, because title to some of the land rested in the United States of America, and some in the Illinois Rehabilitation Corporation.

Old agencies never die, but are absorbed or renamed so life may become ever more complex. Dean Mumford advised President Willard that he thought the federal agencies would be ready to turn the lands over to the University about a year later, around July 1, 1937, and that it seemed work might then have advanced to the point where we could be given some assurance of a reasonably workable unit. It should then be possible to initiate some plot work, and transfer some animals from the University at Urbana to the station. Some work had been done in the spring of 1935 with no formal agreement other than the original Memorandum. Optimism far exceeds pessimism, otherwise the establishment of the Dixon Springs Station would have been aborted long before the completion of the gestation period. Maybe it was the length of that period that produced a robust infant with the vitality for a productive youth.

Options to Buy

The purchase of land for the station was begun in the fall of 1934. Federal employees were assigned the task of obtaining options, which created a great amount of local interest and discussion. It was noted in the press, and even attracted the attention of writers from the *Saturday Evening Post* and the *Chicago Tribune*.

Every community has someone to whom others turn for advice and suggestions. A. L. Robbs was respected by many of the people who lived around the tiny hamlet that bore his name. Not many had cars, but they managed to get to the little town on foot, on horseback, or by team and wagon sometime each week. They talked about various events, and asked Robbs about the proposed developments to learn what good he thought might come from the government's plans. Robbs owned several farms, some of which were in the proposed resettlement area. Others were outside that section, but within the proposed station or Shawnee Forest area.

The first option within the station area was obtained on November 13, 1934. It was for 46.09 acres owned by Robbs, and was appraised at a total value of $329.36. Of that amount, the improvements made up $12. Appraised land was described as either cropland, grazing land, or forest land. All of the land in the first option was listed as cropland, and was valued at about $7 an acre. On the same date, Robbs optioned another farm of 160 acres, of which 70 acres were cropland, 52 grazing, and 38 timber. The improvements were valued at $223, and the total option price was $1,188.90.

Three days later, the Farm Mortgage Holding Company signed an option to sell 239 acres for $2,171.75. Holders of mortgages on farms were sometimes glad to have a chance to get some, if not all of the money they had lent — often more than the land was worth during the depression of the 1930's. During November, 14 tracts were optioned. Seventeen more owners signed in December, 1934. In 1935, eight owners signed options in January, seven in February, two in March, and two in April. There was then a break until the fall, when a few more were signed, for a total of 25 options in 1935. Seven more agreed in 1936, none in 1937, and seven in 1938. When all these deals were closed, except for a few small areas, the land buying for the station was complete.

The options did not establish a final date on which payment would be made. There were no payments until the government was sure of title. Since there were many transactions in the past when the deed, mortgage, inheritance, and other claims had not been recorded, securing title often meant the publication of notices, correspondence with

possible heirs living far from the area and often hard to locate, or court action. The sellers were irritated not only by long delays in payment, but also by restrictions in the options they often did not understand and were compelled to observe while awaiting payment. Their resentment grew.

But resentment was not directed only against the government agents, but also against A. L. Robbs. There was some belief that he was benefiting financially. Robbs was not averse to providing facilities for the government employees, or to taking advantage of any opportunities to expand and profit from the work that was being done. He rented part of his garage for office space, and when there was need for larger eating facilities, he filled in the area between the garage and the store with a building that included a restaurant on the first floor and several rooms on the second.

Robbs and some of the government staff were mentioned in the effort of one local resident to express his feelings in verse. His views were shared by many of his neighbors. Since I was working in the vicinity, trying to get some seeding and other work done in the spring of 1935, I was fully aware of the attitude of many people. I did succeed in convincing them that the University was in no way involved in any of the land deals. Our interest was only after the sale. The people deeply resented any statement or action that made them feel they were considered inferior by the agents. It seemed to me there was more than a minimum of justification for the views in the following poem, which I quote because it represented the attitude of the people.

OUR PROJECT

Contributed by a Neighbor

There was a man named Norton, about a year ago,
Came to the town of Robbsville, and the wind began to blow.
He said he'd been appointed by dear old Uncle Sam,
To come and help the farmers and buy up all the land.

He talked to all the farmers, and urged them all to sell,
And said if they'd sign options, they'd all have jobs as well.
He told them that the lowest pay, would be three dollars per,
And guaranteed them they would get a hundred days a year.

He even went to others, and promised more than that,
And had them thinking if they'd sell, their purses would get fat.
He said there'd be no politics, and all would share alike,
If you would sign the option, you'd get preference jobs all right.

Soon he got their confidence and folks began to fall;
Some sold all that they could spare, while others sold it all.
Now we will see what happened, a little later on,
When the work got started, here's how they carried on.

They started out with Gould and Glenn, together they did pull,
Gould would do the hiring, while Major spread the "bull."
They both would talk to Mr. Robbs, and ask him what to do,
And before they put a man to work, it would have to suit him, too.

Next came Mr. Parsons, he played an important part,
And soon we found that politics was played right from the start.
Then Mr. Trail would come along, he's one of Parsons' pets,
Though once he took the bankrupt law, he'd tell 'em who to get.

They hired a bunch of city dudes, their salaries were doubled,
But our men who sold the land had to take the pick and shovel.
From one to two hundred bucks a month was for some the pay,
But the man with pick and shovel, drew a dollar eighty a day.

They hired a boy named Burris to boss the men with tools,
He would curse and drive them just like a bunch of mules.
We have foremen, clerks, teachers, qualified to do those tricks,
Instead of hiring "heathens," through the sake of politics.

They sent boys "educated," and gave them great big pay,
But all they knew was feed the horses straw instead of hay.
September first they stopped our men, but the office force went on,
Drawing great big salaries and costing lots of "Mon."

Stop feeding those stool pigeons, giving big fish fries;
Instead of being help to us, they're getting all the "Pies."
All of them live somewhere else and none of them sold land,
But they are getting all the cream promised to our men.

Stop this careless spending, the rate you're carrying on.
The appropriations for this job will surely soon be gone.
But now that it's in politics, it seems it will start soon,
And just before election time, they'll put 'er on the "BOOM."

But folks are wise to all such schemes, it's like a painful tooth,
While this poem doesn't rhyme so good, Lord knows it's the truth.
So come now Mr. Norton, make your promise true,
Instead of wasting money, do what you said you'd do.

The programs, projects, appropriations for land purchases, and other items did not fail to get the attention of vocal supporters and critics. Many magazines and farm journals contained articles opposed to activities they considered government regimentation of farms and farmers. Some efforts to reduce the surplus of farm products were labeled as immoral, as bribery of farmers, and as so unworkable and expensive as to constitute a threat not only to self reliance, but to national solvency as well.

On the other hand, many speakers and writers had a heyday selling the New Deal programs to farmers. Farmers were told they had been exploited and oppressed, intentionally and systematically, by the selfish people of the cities and by industry. Now it was to be the farmers' turn to prosper.

In his address to farmers on May 14, 1935, President Roosevelt said the only program of those who were opposed to what the new laws provided, was to let the foreclosure sales go on, and that this was like the old days when the high and mighty always misled the farmers. These same people were said to be the professional mourners who were shedding crocodile tears over the slaughter of little pigs and the plowing under of cotton, and were gnashing their teeth over measures designed to reduce supplies to a level where the rest could be sold at a profit. A few pronouncements of that kind made all that farmers and their organizations and agricultural colleges had done seem to be outmoded or obsolete.

Some people thought the Agricultural Adjustment Act, which had been passed by Congress and had become law on May 12, 1933, would bring the good life to the nation's farmers. Many exhorted farmers to sign agreements to reduce production, thereby increasing prices so that farmers would have parity, a purchasing power equivalent to that which existed in that supposedly golden age for agriculture — the years 1910 to 1914. Parity became so imbedded in the minds of many leaders associated with farming that it has been in the forefront of discussions for more than half a century. It has served both as a stimulant and depressant in the broad spectrum of farming, legislation, and domestic and foreign trade, and has been the source of some very weird philosophy.

Following the passage of the Agricultural Adjustment Act, more than 10,000,000 acres of cotton were plowed under to reduce the surplus. During the same year, 6,188,717 little pigs and 223,247 sows in various stages of pregnancy were slaughtered, and most of the carcasses destroyed. More than 3,600,000 farmers had signed contracts to limit the production of fourteen basic commodities, from which

farmers derived more than two-thirds of their cash income. These agreements required all signers to abide by rules issued by the Secretary of Agriculture. By such means, more than 40,000,000 acres of cropland had been taken out of production, and many people thought the government had installed itself as a super-manager of farming. This was a strange business for most farmers, and for the colleges of agriculture, accustomed to measuring success by how abundantly they could produce. Many considered it a proper function for government to ask for reduced production; but was not the new station that was to be established in Pope County in reality to be devoted to improving income by increasing production?

There were four phases to the Agricultural Production Program, each of which had some relationship to what was being planned at Dixon Springs. One feature was the land-buying program. By the autumn of 1935, more than 6,000,000 acres had been bought or optioned in various parts of the United States, and an additional 4,000,000 acres were being considered for purchase for parks, forests, and grazing lands. The Southern Illinois area was but a small part of the total. Another feature was the resettlement program. The aim was to move thousands of farmers from the marginal and submarginal areas to land where their efforts would be more productive. Under the rehabilitation program, some farmers would be provided with more credit to secure better equipment and improve their operations. The fourth feature was the soil conservation program, which called for the government to assist farmers by teaching them, or in some cases, by doing the terracing of hillsides, stopping gullies, or plowing on the contour. Camps, such as the one established at Dixon Springs, were part of the general soil conservation effort, and many young men were recruited to help with the restoration of eroded and worn-out land.

Even with the deplorable conditions found on many farms, conditions in the cities drove people back to the rural areas. The number of farms in Illinois increased by 18,000 between 1929 and 1933, mainly in the southern part where land was cheap. The Department of Agricultural Economics of the University of Illinois reported that many houses that had been vacant for several years were again occupied as the unemployed left the cities to return to their former homes, where they might again have the standard accompaniments of subsistence living — a garden, a cow, and a few hens.

Some noted writers who were chronicling the events of the times were far from enthusiastic about attempts being made in Egypt. Among these was Garet Garret who commented disparagingly in some of his articles in the *Saturday Evening Post*. In his article of November 16,

1935, Mr. Garret discussed the grazing project. He reviewed the general plan for buying up land, letting the worst go to forest, organizing pastures and building farms on the better land, and selling back the improved farms to the people on easy terms. The first step was getting options on the land, which was done by agents, who were, according to Garret, "salesmen. Their only business is to come back to headquarters with the options." With hesitant owners, "They try threats, and then promises." The threat, he said, is that the "mighty government" will condemn the property, and take it at a much lower price; or that everyone else will sell, "and he will be left there all alone." Then the agent promises that if the farmer signs the option now, he will be guaranteed one hundred days of work on the project.

Garret said that almost everyone signs. He approached "a lovely log cabin with a shaded porch, flowers and vines around it," and found a woman who had refused to sell the cabin "her man built. . . . Can the government take it from them, really, she asks." Another woman, seventy, doesn't want to sign. She helped her husband clear the land. Garret asked, "But why does the government want their land? It says it wants the land because it is no good. . . . There is nothing the matter with it, only it has been a little over-corned."

Garret said that when the sellers got around to reading the fine print on the options, they learned they had agreed to deliver their farm on a certain date, but that the government had not agreed to pay by any particular date. He also said there was some road work being done, and those who optioned their farms could apply for work; but when they did, they found they had agreed to rehabilitation, and had to abide by all the rules that may be used in a government project.

Rehabilitation and resettlement were intertwined. Garret explained that the former might require the latter. This was based on the belief that the provision of capital, equipment, and guidance would make some farmers self-sustaining and thus get them off the relief rolls. Because farmers had not done what needed to be done to control erosion, the soil conservation program had been developed. Garret noted that the farmer would be expected to cooperate with the government for five years, and to handle his farm with fewer crops, more grass, and more trees. This would give him less income during the five years, but he is told that his children and grandchildren will be better off; to which the farmer says: "Hell, I don't know if I'll have any grandchildren. I want more for my family now."

Garret and many others who wrote such articles were not convinced the people in the Dixon Springs area were deprived of much needed for good living. The writers were able to describe the joys of

life on the little farm among the hills, and their outpourings of nostalgia made life there seem to be the abode of celestial bliss, and the scene of the rapturous fulfillment of all desires. While there was much to question about the plans and activities of some of the public agencies to help people of low incomes, it is doubtful if many people residing on farms ever experienced all of the delightful and bewitching enchantment that some metropolitan newspaper and magazine writers suspected, when they took a foray through the country on a Sunday afternoon in June or October. Even the ragged, towheaded children were thought to be more fortunate than the children of the well-to-do of the city because of the few cars, the room to roam, the fresh air to breathe, and the dog and the pony for companions. All wonderful, wholesome delights, to be sure; but where were the books of good stories, the best schools, the modern medical facilities, and the homes with modern conveniences? These were few, indeed, in Southern Illinois in the 1930's.

There could be little criticism of what Garret wrote had he pointed out that the University intended to use the project to learn and teach new practices farmers could use on their own farms. Dean Eugene Davenport had insisted in the early part of the century that the function of the College of Agriculture was to teach people how to do things for themselves and to develop new knowledge through experimental work. We hoped through our work to stimulate people to achieve greater success, and more comfortable and satisfying conditions.

Garret and other writers extolled the hills with their blue haze, the cedars and the oaks, the new foliage interlaced with the pink and white sprays of honeysuckle and dogwood of spring, and the work of Jack Frost as he painted the trees in the fall. Where but on the little farm could one step out into the rainbow of flowers at one's feet, listen to the bluebird and thrush, and glimpse the flight of the tanager and cardinal? Don't these people have rewards worth more than money? How can money replace the income from the earth that is alive with the songs of birds, the high call of crows, the mournful coo of the turtle doves, the shrill "What Cheer" of the redbird, the babble of the stream, the croak of the frog, and the hoot of the owl? All these and many more derive from the prose and poetry of writers who claim to envy (but never seek to share) the joys of the slouch hat, the well-patched pants and the shirt of the man burning brush in the clearing or working in the barnyard where the fragrance of spring is well mixed with the pungent odor of the manure he is loading onto the second-hand spreader. The life and existence of others are never fully described by those who only look.

There were many versions of what people thought they had been told by the representatives of the government. Certainly the agents were to blame for not being careful enough in what they said when they were seeking options. The primary aim was to obtain the landowner's signature to sell his farm. Since this was the first experience of the kind for the farm people, the agents should have been very certain that each seller had a thorough understanding of the consequences of signing an option. This was not done, and thus there was much confusion because of the usual gibble-gabble interwoven with most discussions.

The Dixon Springs Station could never provide all that some already thought the people had or all that those we would try to help would surely want. Perhaps the station might become a significant and devoted companion for those who could be stimulated, and, with the help and friendly counsel, who might do many things better than the station. That would please us, for the successful teacher always hopes that his pupils will surpass his best efforts and accomplishments.

Observations

It is hardly an acceptable explanation of the hilly, eroded, and relatively low-producing Ozark Uplift of Southern Illinois to say that the Lord never did get around to finishing His job of creation. Geologists strive for a more definite and complete story. They tell us that a glacier pushed southward across Illinois until it stopped where the Ozark Uplift occurs and gave rise to the special features of the area between the Mississippi and Ohio Rivers. North of these hills the land is generally fairly level, and much of the area south of the hills is the result of deposition of soil materials by the movement of air and water. The deposits of wind-blown loess are greatest in the western section. The highest point in that section of the state is Williams Hill, near the border of Pope and Hardin Counties, with an elevation of 1,065 feet above sea level.

When Pope County and other parts of Southern Illinois were settled, much of the land was heavily timbered. Many of the trees were cut and burned to clear the land for farming, but there was a good lumber industry for many years and large shipments of mill products were made. The lumber business declined greatly, although there was considerable second-growth timber in the thirties. Much of this was of poor quality because of neglect, indiscriminate cutting, burning, and often extensive use as pasture.

This was once a good home in the Dixon Springs area. The weatherboard was sawed from one poplar tree growing in the area; black walnut made the wainscoating, wallboard, and door facings.

Interior of the home in the preceding photograph. Four large fireplaces like the one shown were a part of its former elegance.

There was only a shallow layer of top soil. When the protective cover of the trees was gone and the soil was disturbed by plowing and other tillage practices for crop production, this layer was soon lost through erosion. Southern Illinois soils were never as productive as the level, dark-colored soils of the central and northern parts of the state, although as we learned later, they did respond to fertilization. Due to the erosible nature of the soils, the benefits of fertilization were soon lost unless great care was used to retain the fertilizers by tillage methods designed for that purpose.

As land was acquired and cleared, some attractive farmsteads were built, as well as some pretentious homes.[1] Then, as now, time brought changes, costs increased, and neglect brought reduced production and incomes. The former owner of one farm of 160 acres now part of the station, had at one time owned more than 1,000 acres and lived in a house that was built of walnut lumber for the supports, stairway, and trim. There were four fireplaces, and there were reports that a whole colony of Negroes was employed at one time, some of whom may have been slaves. At the time of purchase, the house was in such bad repair that only the kitchen was occupied by a man and his wife and child who were on relief.

The inevitable consequences of unintentional mismanagement of the land was its abandonment to grow into a tangled mass of brush, briars, and sassafras and persimmon sprouts, the roots and fruits of which had very limited markets. Any medical properties of sassafras tea were generally replaced by the products of pharmaceutical laboratories. How could sassafras tea, a simple product of nature, compete with "Hadacol," which was widely advertised by press, radio, and billboard, and was said by all who compared them to have far more stimulating qualities than the extract of the bark of a root?

When we started the improvement of the station lands, Dean H. W.

[1] In the 1930's many tracts were held by descendants of the original purchasers. James P. Taylor, who became an Illinois resident a century earlier, in 1833, had owned a farm one-half mile west of the present Dixon Springs Administration Building. Josiah Mizell, an original settler, was apparently one of the ancestors of Wayne Mizell, the oldest nonacademic employee in length of service at the station. A descendant of David Clemens, one of the early settlers, married Roy Phelps, who was the first foreman when work was started at the station. John Cullum was reported as one of the leading farmers for more than half a century, and the Cullum farm was one of those purchased for the station. Joseph Maynor, an original settler, owned more than 700 acres, part of which became part of the station. Others listed as coming to Illinois a hundred or more years ago whose descendants' lands are used by the University include Wise, Mount, Morse, Barger, Kerley, Chester, and Lauderdale.

Mumford wanted a tract of suitable size left to develop as it would without any interference by man. Accordingly, about 20 acres similar to land that produced 13 bushels of corn per acre in 1935 was left for that purpose. For want of a better name, it was called "Wishy-Washy." It is a short distance north of the Administration center. A few years later the corn production on the tilled land had increased by 75 bushels per acre. Even if the "foot of the master is the best fertilizer," more than his footprints must be plowed under for soil improvement. A casual look at "Wishy-Washy" will indicate the deplorable condition in the thirties, and the need to summon courage and "cast-iron optimism" to learn if improvement was possible.

The condition of the people had deteriorated so much that when the depression of the thirties came, it was possible for an old man to say to me: "Depression? What depression? I hear tell of one in some of the cities, but I don't see no difference around here. Never had no money and ain't got none now."

In 1934 a good share of the families in the Dixon Springs area had annual gross incomes of less than $300. In the hilly section, most of the farms were assessed at $3 to $5 an acre. In 1936, 42 percent of the families were receiving or were certified as eligible to receive some type of public assistance. Seventy-five percent of the homesteads had no wells. Very few homes had a bathroom.

Life to many was just a succession of the simplicities of day after day and year after year. Runny noses of kids were as normal as running feet. Thread broke, and patches came loose on the seat of the pants. Grandma's comforter wore thin, and the wallpaper hadn't been renewed since the stool broke. But why worry about what could not be changed? Sweet potatoes, rabbits, squirrels, fat meat, meal, and sorghum would get you through the winter, and sassafras tea and onions would fix you up in the spring. Then came things from the garden, and wild blackberries were free for the picking. Life was partly comfort, partly misery; some friendships, some animosities; some boisterous companionships, some sacred solitude; some unshakeable beliefs, some stupid superstitions; some happiness, some sorrows; some births, some wakes. There was always the majesty of existence and the bewildering variations in life; the admiration of the beauties of nature and the fear of the storm and fire, along with the unawareness of the subtle destructiveness of neglect.

People could cope with death, but it was the job of living and carrying their burdens along toward eternity that was sometimes hard to bear. They were not born to peace and plenty, but they could accept their lot and seek to be content. If greater prosperity were brought

within their reach would that bring discontent too? Was the goal of the new station their prosperity, or their happiness? Would the station help people, or would it make government more their master?

I have already stated that not all the owners of the 800,000 acres the government proposed to buy were interested in selling. Purchases at the end of the 1930's totaled about 200,000 acres. Reasons for not selling were extremely varied, but most bore some resemblance to, "This is our home."

Home cannot be far from the top of the list of the most meaningful words in the English language. If contentment and satisfaction are ever achieved, the chief source of those heartfelt pleasures is likely to be the consoling privacy of home, be it the most unobtrusive or the most magnificent. If there is a quality shared by all people, it probably is as evident in their appreciation of home and family, as in any facility, activity, or achievement.

I was never more impressed by the meaning of home than one evening in the spring of 1935, as I was on my way from Robbs to the Riverside Hotel in Golconda. It had rained most of the day and the road south from Glendale to Route 146 was lightly graveled in some places, was extremely slippery in most parts, and in other places was covered with water several inches deep. About a mile from the Route 146 pavement, I came to one of the largest and deepest puddles. As I tried to drive through it, the front wheels of the car slid into one rut and the rear wheels into another. I tried all the usual shifting of gears to go forward and backward, but such maneuvers were of no help. I was only a few rods from a small farm home on the east side of the road. A barn and a few other small buildings were on the other side. I walked to the house, went up on the porch, and knocked on one of the two front doors, the standard design of many of the houses. If the house had ever been painted there was no sign of it left. Some of the window panes were broken, and the holes were stuffed with rags, or had small boards nailed over them. The steps were uneven. Some of the porch boards were loose or broken. The man who answered my knock was in his late fifties or early sixties, dressed in the usual overalls and blue shirt, wore rubber boots, and had several days' growth of whiskers. I told him who I was and that my car was stuck in the mudhole a few rods up the road.

"It ain't no trouble to get stuck there," he said. "You ain't the only one that's been in there today. A truck came along and pulled the first one out and when he saw another car coming waited and pulled it out, too."

He then asked me to come in, but I said "No, I won't come in as

One of the homes in the area in the late 1920's. To some people the economic depression of the 1930's was little different from the conditions of the preceding years.

my four-buckles are all muddy. If you are willing to get your team and help me out, I'll gladly pay you for your trouble."

He put on his hat and jacket, and we crossed the road to the barn. His horses were of medium size and seemed to be a gentle and sturdy pair. While we were putting on their harness, he remarked that some parts of the harness were not as strong as they once were, but perhaps would hold. We removed the double-trees from a wagon and fastened a chain to them and to the front axle of the car. When the horses were hitched, I got into the car, started the motor, and said: "Okay." The wheels turned and the horses pulled, but the car stayed in the mud. We got a shovel and dug around the wheels and tried again. As the team pulled this time, he slapped them with the end of the lines and they pulled harder. Too hard. Two of the tugs broke and that ended any possible help from the team.

We put the horses in the barn and went to the house. I had asked if they had a telephone, and much to my surprise there was a single-line system that operated from Rock, a tiny cross-roads place on the top of a hill a few miles away. We were able to get word to the Soil Conservation Camp at Dixon Springs. A few of the men there had been in my classes at the University, and while I think they found some pleasure in my difficulty they would, of course, bring a truck to help me out.

There were three rooms in the house, but only one was in use. It served as kitchen, living room, and bedroom. The other two rooms were in such bad repair that they were unlivable. In the room where I waited there was an iron bed, three chairs (one of which was an old rocker held together with baling wire, the standard farm repair material), a small table, and a wood-burning cook stove, behind which was a large dry-goods box about half-filled with sweet potatoes. The floor was of pine boards and there was no sign of rug or carpet. To one side of the stove a dishpan caught the water that dripped from the ceiling at that point. A collection of jars, crocks, cans, broken chairs, tables, and wood for the stove was in another room. The third room was empty and water stood all over the floor.

While waiting for the truck, I learned that the man and his wife had spent most of their lives on the farm and in the same house. I told them what I had been asked to do and explained that I had nothing to do with the government buying land. They knew nothing about the University of Illinois, and had never been as much as 50 miles from where they were then living. I had noticed a good-sized shoat in a pen near the barn, and said that it seemed to me to be big enough and fat enough to send to market.

"No, we don't plan to sell. This is our home and we will keep it."

"Oh, we don't plan to sell him. Soon as the weather clears we will butcher him for our own use. With the meat we will have from him and the sweet potatoes we have left there in the big box, we can get along real good 'til the garden stuff is ready. We already got potatoes planted. We had three pigs last fall, sold one and butchered the other for winter meat." Each one told me some of these and many other things, and both spoke earnestly and seemed to have considerable pride in being able to manage so well. Soon it would be time to get the fields ready for planting, and they were hopeful that it would be a good year even without seeming to recall that 1934 had been very dry. I remarked about their cheerful outlook and said they reminded me of a man in Oklahoma who said he had "two good years — one was 1902 and the other was next year." I said that since they were planning their spring planting they probably had not signed an option, and asked if they intended to sign.

"Oh, no, we don't plan to sell. Some of them men were here and talked to us, but we didn't sign and we ain't goin' to. We ain't got nothin' fancy here, but it's our home and we will just keep it and stay here. Times have been harder than usual, but they'll get better again sometime. We hain't starved yet and this is our home. We'll just keep it."

The truck came and pulled the car to solid roadbed, and I was again on my way to Golconda. As I drove to the hotel, I must have said "there's no place like home" a hundred times aloud to myself.

That thought contains the essence of why the government was able to buy only about one-quarter of the 800,000 acres included in the proposed forest area. Who but ourselves determines our condition, our hopes, our needs? Even with the stress on devices, gadgets, economics, and technology, can it be that human beings can get along without many of the physical conveniences more readily and easily and with far less anguish than they can dispense with companionship or the primary essentials, such as a simple home? Would what we were planning provide something for the inner satisfaction of these people, or would everything we do just be visible on the outside? Could those who were to operate the Dixon Springs Station provide the sympathetic understanding and stimulation that these people needed to understand the world, rather than merely stand in awe of it?

That night after dinner I picked up a copy of the *Reader's Digest* and noticed that another author had written that man does not live by bread alone. He also proclaimed that the need for a new morality placed a heavy burden on those who wanted to help people "transcend their inner anxiety and stand undismayed in the presence of grief."

Man doesn't live by bread alone; neither does he live long without it. Maybe Dixon Springs could help provide a little more bread and a little of what else man needs. With that rationalizing I went to bed, and as I went to sleep I was sure there was too much preaching to people and too little working with them.

Cancellation, Troubles, Progress

The course of many things besides that of true love does not run smoothly, including the development of the Dixon Springs Station.

Many new agencies had been created by the federal government to deal with efforts to stimulate the economy during the depression. These agencies were staffed with new personnel, and there was much confusion. Early in 1935, the soil erosion work was transferred from the Department of the Interior to the Department of Agriculture, and the $40,000 that had been allotted to the Bureau of Animal Industry for its part in the establishment of the new station was no longer available. John R. Mohler, Chief of the Animal Industry Bureau, then notified H. P. Rusk that the bureau could not carry out the terms of the Memorandum of Understanding and could not agree to its renewal. There was no longer any chance of the transfer of surplus stock from federal livestock experiment stations.

It was also becoming clear that anyone's expectations that the station would be practically self-supporting were not to be realized. Experiment stations do well enough when they discover helpful knowledge and show operations how to perform work most efficiently. For some time, the Dixon Springs Station Committee was divided two-to-one in favor of setting up two or three farms within the station area to show what combinations of enterprises and practices would be most profitable. The proposal became much less attractive when I asked what we would say to those private farm operators when they make a profit and we with all the talent must report a loss. Experimental work is not conducted to make a profit, but to learn which fertilizers increase yields, which tillage practices reduce erosion most effectively, which rations produce the most rapid gains on animals, which pastures provide the most grazing, and so on. I said that people are interested in such matters because they relate to profits, but profits belong to private operators, who depend upon them for their livelihood, and not to tax-supported undertakings. If we do the things we are supposed to do so they are helpful, we will be successful.

The farms were not set up, but records that farmers kept on their own farms were used to supplement the work of the station. Thousands of farmers who later visited the station were sufficiently impressed to have their own operations influenced in many beneficial ways, as through the use of their own ingenuity they selected and used what they considered best for them.

Many other matters were more conducive to annoyance than to harmony. Some were minor, such as one which caused Rusk to be provoked by the picayunish attitude of "paper shifters in some offices." Some of the expenses Rusk incurred on trips to the station were to be charged against the USDA's allocation for the station. After the loss of the $40,000, he was notified that it would be necessary for him to find another source of reimbursement. He had been reimbursed for $7.20, and was told to forward a check in that amount payable to the USDA, so it would be reimbursed, and that his later expenses would be held until he had done so.

When I learned of his difficulty, I was glad I was not submitting my expenses to the USDA, although I was provided with a federally owned car along with some certificates for the purchase of gas. The dealer could be paid later for these certificates by the federal government. There was one dealer who would not accept any such arrangements "even if F.D.R. himself asks me to do it. Those guys won't trust me, and I'll be damned if I'll do what they want." Since it was almost midnight and I had about 100 miles to drive, I paid cash and drove away.

The Land Policy Section of the Agricultural Adjustment Administration would now be associated with the station's development. Chester C. Davis was the administrator of the Land Policy group.

This change meant there was no longer any possibility of the station receiving about fifty purebred Belgian horses, and perhaps one hundred cattle from those owned by the USDA. Concerned, Rusk wrote to Mr. Davis on April 15, 1935, reaffirming the value of the Dixon Springs project, and reminding Davis that the original $40,000 was allotted for

a relatively small acreage inside the Shawnee National Forest. No request for an increase in funds was made after the project was transferred to a much larger area to be purchased adjacent to the Shawnee National Forest by the Land Policy Section of the AAA. It is obvious that the amount allocated would not meet the needs in connection with the improvement of this much larger area as well as it would have met the

needs in connection with area originally contemplated. Actual acquisition of the land has now been delayed until it now appears impossible to spend the full allotment effectively before June 30. . . . We can, however, effectively use some of this money before June 30 and a much larger sum, if available, after July 1. . . . I am eager to do all I can to assure, through some agency, sufficient funds for a reasonable development of this area and the establishment of the demonstration and research work on a plane that will insure success. It seems to us that this project has already cost so much in money as well as in the time and energy of busy men, attacks a problem of such importance, and promises results of such significance that it must not be orphaned before it is fairly born. In the ultimate disposition of this request of the Bureau of Animal Industry for diversion of the $40,000 to other federal projects of the bureau, I hope the needs of the Dixon Springs Station are not overlooked.

At about the same time, L. R. Schoenmann, Regional Director of the Land Policy Section, wrote to C. F. Clayton in Washington, telling him that plans were being developed for the use of the purchase area, and that the state director of Rural Rehabilitation and several directors of the Rehabilitation Corporation had just visited the proposed resettlement area. They had approved the employment of a project manager and superintendent of construction. Schoenmann then asked Clayton for advice on use of the funds assigned for the purchase area that had formerly been available through the USDA Bureau of Animal Industry. He also asked for guidance in the preparation of plans of what should be done. There was no clearly defined responsibility in the minds of federal and perhaps university people as to what was being done, what should be done, and who should or should not do it.

I was working in the area in the spring of 1935, trying to establish some pastures so we might start a herd of cattle. Apparently, some money was spent by the Soil Conservation Service for the purchase of grass seed, as a great quantity (two freightcars) was shipped to Robbs. Much of it did not seem to be of good quality, and it was too late in the year when much of it was seeded for it to do well. I was told to get permission from anyone who had optioned his farm to sow some of the seed on his farm. This was not always easy to do, as the farmer wanted to be hired to do the work, and having no funds, I had to rely on men from the WPA or the CCC camp.

When I got permission from the landowners, grass seed would be taken to the farm, and men with horn or windmill seeders would fill them and then walk across the field, usually four men abreast. I ar-

ranged for the use of all the seed. To some of the people I became known as "the seedman." I called the four men who did most of the seeding my "four horsemen of the Apocalypse," because I was sure that if anything came from what we were doing, it would be a revelation.

Sometimes I was ordered off the place when I went to ask permission to sow grass seed, because I was thought to be "one of them fellers that talked us into optioning our home and they hain't done a thing they said they would do." There was one very emphatic widow who emphasized her "no" with a shotgun that was leaning against a chair on the porch. There was a path from the yard toward a patch of timber where I suspected the repeal of prohibition had not yet interfered with profits. Since about five gallons of corn meal could be made into about ten gallons of "squeezins" for which there were many customers, it was a reasonably profitable outlet for corn. Some months later I saw the remains of a still, and I was glad I accepted the invitation to "git."

In spite of all the confusion and hindrances, we had some indications of progress. The first test plots were laid out in the spring of 1935 on a tract known as the Brookport Land Bank Farm. About ten acres were plowed, disked, and harrowed, and some ground limestone from a quarry and mill operated by the camp was applied to some of the plots. Some rock phosphate was also applied either alone or with limestone and potash. Some of the grass and legume seedings did well enough that the results were listed as "encouraging." These plots were on upland, and it was not expected that Reed's canarygrass would survive, as it is usually found on wet land. Even though the plots were later plowed several times and used as general pasture, some canarygrass was still struggling for survival 20 years later. In 1935, none of the legumes did well except lespedeza. Studies of many species of grasses and legumes were conducted each year after 1935. Some have contributed much to good pasture production.

Two old gray mules no longer of much use to the station at Urbana, Kate and Beck, were the first animals sent to the station. These were not the only discarded items from the Urbana station that were used in establishing the work at Dixon Springs. It seems to be a common practice to give poor things to the poor. Kate and Beck were well along toward the end of their twenties, but they had looked after their own well-being with that sagacity for which their kind is famous, and which was not dependent upon their long association with an institution of higher learning. They were able, but usually unenthusiastically willing, to do what was asked of them.

From this quarry at Millstone Bluff near Robbs, many tons of limestone were removed and crushed for roads and for soil improvement.

How soils were limed in 1937 in Southern Illinois. The very acid soils at Dixon Springs required 4 to 5 tons of limestone per acre; in three years more than 15,000 tons were spread on station land.

Getting Kate and Beck from Urbana to Dixon Springs in 1935 was not accomplished without some anxiety. I had come back to Urbana over a weekend and made arrangements to have the mules and some equipment sent down the following week. The Department of Animal Husbandry owned a truck with a stock rack large enough for the mules, a disk, and a harrow. John Munson, who had never been to the station, was chosen to make the 225-mile trip. I would meet him at Vienna and show him the way to the station. He thought he would reach Vienna about six in the evening after leaving Urbana early in the morning. Not all of the way was paved, and tires and motors were not as dependable then as now.

Six o'clock came to Vienna, but John didn't. I waited several hours and then drove back to the station thinking he may have taken a different route from the one planned. Midnight came, but still no mules. I decided to go to Golconda and go to bed.

I found John the next morning. He had reached Vienna at 2 a.m., having been delayed by tire and motor trouble. We drove to the Charles Phelps farm, unloaded the disk and harrow, backed the truck up to a roadside bank, and led Kate and Beck out. They had stood the 28-hour ride well, but had rubbed some of the hair from their tails against the side of the rack. Mr. Phelps was put in charge of the span and planted some corn which produced less than 20 bushels an acre, and soybeans which produced less than 5 bushels. Those were the first soybeans grown in the area, and there was much discussion as to whether they would ever do as well as the familiar cowpeas.

After years of good service, Kate and Beck completed their service to man and went to their final reward as food for man's best friend.

More Problems, More Progress

"How's everything?" was a common question, and an equally common greeting. "Well, we don't know what we're doing, but we're getting it done," was not a farfetched estimate of the gradual, dirge-like pace from confusion to progress. While resentment among the farmers was never obliterated, it diminished as clarity and understanding spread among all concerned.

Rusk mentioned the resentment in a letter to the Washington office in the spring of 1935 when he wrote:

Now I feel I should clear up one or two loose ends in my telephone conversation. With respect to the attitude of the people living on the area,

An area just west of the Administration Building that had produced 13 bushels of corn per acre before soil improvement was used for some of the first plots to test the adaptability of many grasses and legumes and their response to soil treatment.

Kate and Beck, soon after their arrival at the station, at work in a pasture establishment project.

these people were led to believe that there would be work for them either in the resettlement area (Rural Rehabilitation Project) or on the station area long before this. Those who optioned their land early looked forward to the starting of this work, and as month after month passed with practically nothing done except by members of the CCC camp, surveyors, engineers, and others brought in from the outside, they have gradually lost hope and have come to feel that they have been "tricked." The longer they brood over the situation the surer they are that they were promised impossible things. While I cannot account for the mental gyrations of some of these people who have come to believe that they were 'guaranteed' a certain amount or kind of work, I can and do sympathize with them, for their future is indeed not bright unless they can get work of some sort and that very soon. Most of them had little or no equity in the land. The major inducement for such people to sign the option was that they were getting out from under intolerable burdens, and the project created hopes for employment. Personally, I do not believe that it will be wise to bring in more relief labor, or to use much more outside help of any sort, until we are able to give work to those on the area who want and need it desperately.

During my last visit to the area I came to the conclusion that I was not so smart as I thought I was when I got through a work relief project for the Dixon Springs Station. These people do not want to go on relief and that is certainly not what they expected when they signed the options. Dr. Kammlade reports that some of these people are threatening to refuse to sign deeds until there is some tangible evidence that the government intends to make good on what they call guarantees of jobs. They bitterly resent having camp workers brought onto their farms to do work which they could do when they are so badly in need of work. Some of them have flatly refused to let CCC men on their farms.

A number of conferences were held to discuss employment of the local farmers, as well as other problems related to the work of the project. Conferences involved the University and federal agency representatives, and concerned such items as whether the Dixon Springs Station would meet the needs of all the states that had similar problems, and whether it should be made a regional effort. There was talk of moving the CCC camp from Dixon Springs, but that would be done only as a last resort because of the need for the help of men and equipment for all kinds of soil erosion work. However, all that equipment would be operated by those who belonged to the camp and would be of no use to those who had optioned their farms and needed work.

A typical barn in the Dixon Springs area in the 1930's.

All of the old barns in the project area were replaced by modern structures. Four barns like this one were built (1938 photograph).

There was much elaborate planning for the resettlement area. This was done by outsiders, as local people were not trained in designing buildings. Since no buildings were started in this area and the $40,000 had been cancelled, there was nothing to do except for the people to start work again on their own land. Some had sold their horses and mules when they signed options, because after they signed they were not supposed to work the land. Those who had equipment tilled their land so they could get some income; this was the only way they could retaliate against the unfair treatment of the "Great White Father in Washington." The red tape of bureaucracy was beyond the comprehension of people who still thought a man's word was his bond. Red tape and legal investigations of transactions were unknown to people who often bought and sold farms and dealt with each other without giving evidence of indebtedness.

It was during these years that much planning was done by H. P. Rusk, who was then the chairman of the committee and the University's chief representative. Any technical work had to be done by others than those who had sold their farms. Most of the latter had done a great variety of tasks, but there were none who were skilled as carpenters, masons, machinists, and so on. No one knew how to read a blueprint. They could drive nails, use a handsaw, and do a fair job of painting. They could set two posts in a row, but it is much more difficult to set three in a straight line, especially if the posts are crooked and if the work is being done in rough country. All the work they did was well enough done to be useful, but it was not always praiseworthy.

Steel I-beams were new to them, and so it was not surprising when they laid the beams down sideways rather than setting them like the letter 'I' when they were building a new 14-foot bridge. It is certain that many of the men were more skillful at the end of the next five years than they were at the beginning, and some who continued to work at the station became reliable and skillful assistants.

The University representatives determined the location of plots, houses, barns, many roads, facilities for water, and the design and erection of the administration building. H. P. was adept at rough design work and was one of the early developers of pole-type barns. It was thought that much of the field work would be done with government-surplus horses. Four large barns were planned with that in mind, but little used for that purpose, although they were easily adapted for use by cattle. Since H. P. thought the barns should have hay storage from the ground to the roof in the center for the full length of the barns, the stalls were arranged along the sides. Some rural architects thought the pressure from the hay would weaken the structure and

The stone used in constructing the Administration Building was taken from a waterway with a shallow soil covering on the Morse farm.

The completed Administration Building had offices, laboratory, heating facilities, and restrooms in the end sections, and a large truck scale in the center section.

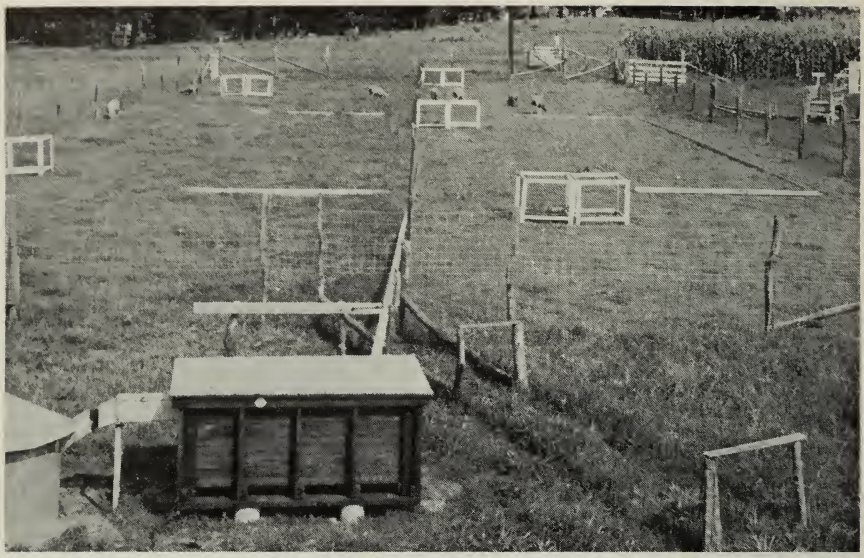
cause it to "give," but H. P. used sloping poles to form the sides of the stalls and made them serve as props, and there never was any sign of "give" to the barns.

After one of the barns was built, we decided that it was in the wrong place because of plans to build a dam and make a lake at the location. Most people thought the barn would have to be torn down and then rebuilt in the new location; but not H. P. He said the 98- by 48-foot building could be moved readily. "Just jack it up," he ordered. "Bore holes near the bottom end of each of the poles. Bolt on some good heavy planks between the poles. Use some more poles for skids and smaller ones for rollers. Hook on to one end of the barn with a drag-line and a 'cat,' pull it across a small waterway and road; move it about a quarter of a mile altogether. Turn it around, reset it, and the job will be done." And so it was. Those who had never seen anything bigger than a privy being moved on Halloween thought "that professor knows his business."

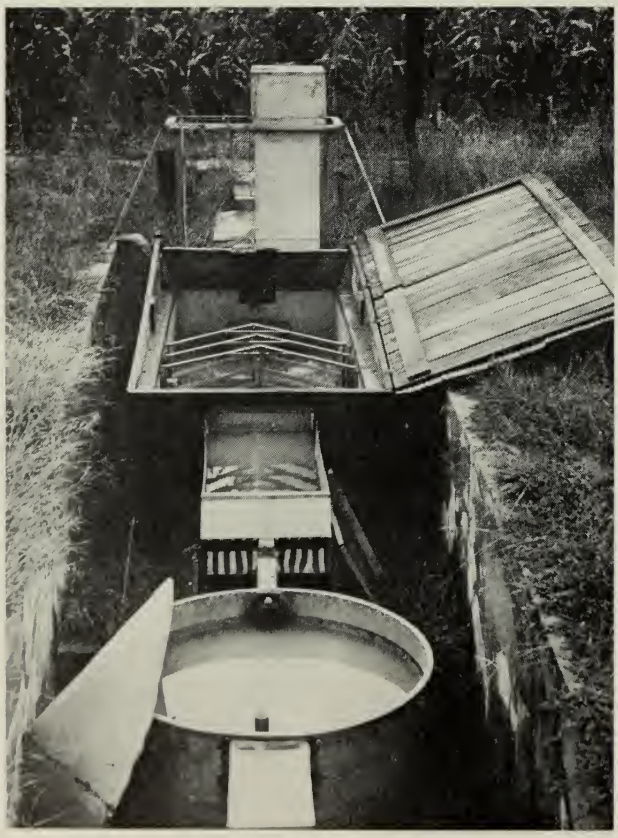
When we were designing the Administration Building, H. P. insisted that it have a big truck scale through the center, crosswise, so that all production from the fields could be brought in for weighing. Although such weighing was not always feasible, the scale did serve the station and the community very well for many years. One use was for the reception of the thousands of visitors where they could be in the shade and have a Coke.

The Administration Building was built of stone taken from a waterway where it had been exposed by run-off on the Morse farm. The men broke the stone into large irregular pieces which made laying it rather difficult, although it eliminated the need for straight lines between the stones. Not a single man who laid the stone walls had ever used a trowel before, but they accepted the challenge, and the building still stands. Some of the men stayed on to work at the station. One whom we called the building maintenance man was building a two-story house. The plans called for the chimney to go from the basement through the two stories. When he was laying the bricks for the chimney, he said he was very careful not to lay any of the bricks upside down. When he was asked how he was getting along, he said, "When I get this chimney built and one more I'll have built two." His death at the station was one of three deaths caused by accidents. His and another were caused by heavy tree timbers falling on them. The third was caused by lightning. That man was alone in a ten-acre field; a small cloud passed over; there was one flash of lightning of such intensity that the coins in his pocket were fused together.

Other houses, garages, and sheds were constructed. We built sev-



One of the many areas of plots used to measure rainfall, water runoff, and soil losses under various methods of tillage, crop production, and utilization. This work of the Soil Conservation Service started in 1936.



The tanks below the walled plots of corn caught soil and water runoff so that soil losses could be calculated.

eral upright silos, and an eight-car garage back of the administration building. It has been used mainly for other purposes such as storage of materials and as a laboratory. There is also a unique type of shearing shed, which had to be turned around like the barn at the lake. That was done by tearing down a partially completed structure and rebuilding it. Its unique feature was a "sweat pen," an incline that the sheep walked up to smaller pens from which they were taken and shorn. Then they slid down a short chute to pens on the outside.

While those from the University were working with the federal project's representatives in the development of the station, the Soil Conservation Service was building some houses, laboratories, and devices to study run-off and soil losses on various slopes, and the influence of different tillage methods and vegetative soil covers on soil erosion. It was difficult to find areas of uniform slope large enough for a series of plots where borders could be installed so that only water that fell on a particular plot could be directed into collection tanks, and the run-off could then be calculated as a percentage of the total rainfall. Gauges were installed to measure the intensity of the rainfall. Samples of the collected water could be taken and later the dried soil weighed, after which a few calculations would reveal the soil loss per acre. The plots were all fenced so different rates and methods of grazing also could be studied.

C. A. Van Doren was the leader of the soil research work, and Lee Gard was the resident manager and did the operational work at the Dixon Springs area. Among the earliest data collected were some which showed that under the common cropping practices, when there was little or no cover on the ground, an inch of soil often would be lost in fewer than ten years, and under some conditions, in as few as three to five years. With a good grass cover, such as would exist with careful grazing, it would require at least 300 years to lose an inch of soil. This served to dramatically emphasize improved methods of soil management, and led to the development and increased use of minimum-tillage methods for row crops.

Before 1949 the University cooperated in all appropriate ways in these studies. In that year the Soil Conservation Service decided to discontinue work at Dixon Springs, and initiate or expand work at other places. When we learned of these plans, a request was sent to University President George D. Stoddard for authorization for the Dixon Springs Station to take over the SCS buildings and work, and to transfer Lee Gard to the Dixon Springs Station staff. Since President Stoddard had paid his first visit to the station a short time before and had been favorably impressed, he approved and obtained the Trustees'

assent. This gave added breadth to the work of the station, and the staff continued to exhibit a teamwork that had always been such an outstanding feature that it gave rise to frequent comments by visitors. The cooperation of members of the various subject-matter areas was advantageous to the progress and achievements of the station.

The cooperation extended even to the plumbing. One evening before a large number of visitors were expected the next day, it was discovered that there was a stoppage in the sanitary sewer lines extending from the restrooms in the basement and under the concrete floor for most of the length of the building. Unplugging had to be done without delay. Five men undertook the job. Two of them had master's degrees and three had Ph.D.'s. After much poking and prodding, we tested the completeness of the work by turning water into the starting point of the sewer and then putting a piece of toilet paper about the size of half of a dollar bill in the water. There was a floor and pipe opening about 60 feet away near where the sewer left the building. Dr. Jesse Sampson had been assigned as look-out at that opening. When he saw the paper float by he yelled, "There she goes," with such glee that there was no doubt our efforts had succeeded. His elation was contagious, and concern about those facilities was banished for the rest of the night.

Water, Wells, Witchers

Everyone knows water is essential for the life of plants and animals. Some biologists believe that animal life first existed in water, and as evolution progressed through many millions of years, living things gradually adapted to living out of water, but never became able to exist without it. The conservation of water and the maintenance of its purity steadily become of greater importance. In the work of the Dixon Springs Station toward increased production, the conservation of water was of equal importance with the conservation of the soil.

In Pope and many other counties, water for use by man and animals comes mostly from streams, ponds, lakes, wells, and cisterns. In the early years of the project, there were no lakes in the area. Ponds from which farm animals obtained water were usually small and shallow. They were made by the use of a team and a slip-scraper to build a dam across a small waterway or to scoop the earth from a small part of the barnyard so the water from the roofs would collect in the depression. Very few wells had been drilled on any of the farms, and most rural people depended on water from cisterns that had been

built close to the house. Rain water ran into the eave troughs and entered the cisterns through the downspouts. Filters were not used, and the dust and debris that collected on the roofs made the water have a peculiar taste and, of course, it was of doubtful purity. Cleaning the cistern was far from a regular job.

There were very few springs in the area. The one that was most accessible to the people in the vicinities of Glendale and Robbs was known as Spout Springs. Some people made regular trips to the spring and hauled sufficient water for their personal use in their homes. The older residents were sure the springs had never stopped flowing during the past 100 years, and many thought that they had "flowed forever and would likely keep on until the end of the world."

The local people never questioned the safety and purity of Spout Springs water, but the Public Health Service of Illinois would not approve the water for public use because of the possibility of contamination. If anyone happened to eat at the Robbs Restaurant, the water he drank was likely to be from Spout Springs. The water was not thought to have any effect on the human birthrate, but there were rumors that it contained what was necessary to produce boy babies. To have that effect it was supposed to be drunk as it came from the side of the hill, either just before sunset or at sunrise while the man held his hat in his left hand and bent over toward the north to drink.

It was necessary to develop a source of water near the Administration Building. The elevation at the site was 541 feet above sea level. Drilling passed through various layers of soil, sandstone, and limestone. Some of the limestone layers were very thick and hard, and drilling was slow and costly. There was no evidence of a reasonably good supply of water until a depth of 616 feet was reached. This was below sea level. The well was cased, a motor installed, and pipe laid to a 5,000-gallon tank that was located about 1,200 feet from the well on a platform about 40 feet high. From the tank, lines of pipe led to the Administration Building, residences, and some other places nearby.

The water from this well was extremely soft. Although it was potable, most people did not like the taste. The main difficulty was that the supply soon dwindled until it was insufficient for our needs. With the scant supply, sand would be drawn into the cylinder, which made frequent pulling of the pipe, sucker rods, and cylinder necessary for repairs. This was an exasperating task, and there were times when, because the tank was empty, water was hauled from Spout Springs and pumped into the tank. This may have been a health hazard, but so was the lack of water, and there was no better source.

Three other wells were drilled at other locations. None was as deep

H. P. Rusk drinking from Spout Springs.

as the first well, but all had much more abundant supplies of water. Water from these wells was not as soft as from the first well, but had better taste. All of these three wells continued in service for a long time. The well at the Administration Building was a source of constant expense and disappointment, with constant complaints about the taste of the water supplied to visitors and staff. These complaints finally led the local staff to buy a Coca Cola dispenser with their own money. They recovered the cost in less than one year of operation.

However, water was needed, and a special allotment of funds was obtained to drill another well near the Administration Center. When this was done, a member of the State Geological Survey was asked to make a study of the area to learn where it would be best to drill near enough so water could be piped to the storage tank. The report said that no place seemed to be better than another.

Water witching is not in good repute in scientific circles. No one who has studied the practices of witchers has found any basis for the hidden ability, or the reaction he is supposed to get when dowsing for water, minerals, or other materials. There is no doubt on the part of dowsers, except their doubts of the reasonableness of the scientists. After I was told it would make little difference where we drilled next, we learned there were several witchers who were willing to locate the best spot for water.

If there was an underground stream or a large concentration of water in some strata of sand or gravel, these men were sure they could locate it. It was not necessary to supply anyone to help a witcher or to have any faith in what he was doing. Witchers believe that if there are waves, rays, and beams which you cannot see or feel, there must be waves or something that can come from water underground. Sometimes it is fun to be called ignorant if you know you can do something the learned cannot do.

It would not cost anything to have the witching done, and since we had seen working wells that had been located by dowsers, it was decided to see where one would say to drill. He looked about, found a suitable forked twig (those of several trees and shrubs are considered suitable), trimmed it, and went about the job by going toward the area of Spout Springs. Then with much meandering, turning, and spiraling he walked toward the Administration Building. He continued in that general direction and finally reached the point near where the pipe from the old well led up to the water tank. There he received notice of an abundance of water. I was not alone in thinking that we would have to drill into the water pipes to find water there, but we were assured that all the water we needed was right there. That is

where the drilling was done. When a depth of a little more than 400 feet was reached, the water rose to within 200 feet of the top of the casing and a pump was set to test the supply. Pumping was continued for more than twelve hours. At the end of that time the water level in the casing had not been lowered significantly. I guess we felt about as Columbus did when he found land. The cost of the drilling through some very hard stone — only three or four feet a day at some depths — was so high that it was easy to understand why there were so few drilled wells in the area.

Later I cut a stick and tried my skill. I am not wired for witching. I didn't care who found out that one division of the University was so unscientific as to have someone use a forked stick to locate water. We drilled where the man said. We found water. It's hard to argue against success.

Ah! The dowser didn't say anything about the quality of the water we would get. The Public Health Service said it was fit for human use. As soon as the water came from the faucets in the homes, the women noticed it was very different from water from the first well or from Spout Springs. It was hard. It rapidly corroded the pipes and fixtures. "Tattle-tale gray" was an inadequate description of what the water had done to the laundry. Somebody had to be blamed for that and who was a more logical choice than the chairman of the committee? Some of the hardness of the water seemed to have been transferred to the women. They were so hopping mad they could not sit down.

The water was tested in several laboratories, and the reports from some were that it was the hardest water ever tested. It contained large amounts of calcium carbonate, other calciums, iron, magnesium, and other chemicals. Some of the local wits said it was so hard it would not go around the bends in the pipes, the cows couldn't swallow it, cats couldn't scratch it, and it could be used for skating without being frozen.

Some manufacturers of water softeners said the water could be treated, but the softeners would need very frequent attention and renewal, and these things would be very expensive. There was always an abundance of water in the well, so much so that it was used for the concrete for the paving of a long section of Route 145.

The Public Health Service would approve Spout Springs water if it could be chlorinated. Devices for that purpose were available, and it was a simple matter to enclose the water in a concrete tank by using an electric-powered pump to force the water about three-quarters of a mile from the spring to the Administration Building. After 25 years and the expenditure of many thousands of dollars, we achieved what

regulations for so long would not allow. In such devious and cautious ways was progress and its benefits brought to Pope County.

Water for livestock in many of the general pastures and in the experimental plots also required much planning and construction work. All of the ponds were constructed on the basis of plans and specifications approved by the Soil Conservation Service. Fences kept the livestock from damaging the dams and spillways, but did not prevent burrowing animals, especially groundhogs, from digging holes in the tops and sides of the dams.

Ponds can be used for household water if the water is protected from contamination and then run through suitable filters. Ponds are also good recreation areas and, when stocked and well managed, afford good fishing. Proper fertilization may provide more food for fish, enlarging their size and population, and thus contributing to the well-established honesty of fishermen. Success as a fisherman has been very elusive in my case, although one day I did catch one about 3 inches long and two little ones. Even with that record, my usual companions, Bob Webb and Jack Lewis, did not cease making uncomplimentary remarks.

Some ponds at the station were used for studies in the value of irrigation for pastures and row crops by using an overhead sprinkler system. The small, dedicated, harmoniously working staff was never averse to trying to serve any desires of people in the most productive manner. It was this that made Dixon Springs of such great interest to so many people.

Doubts and Doubters

Those who established the station conceived of it as a place to test not only soil conservation but also methods for improving pastures. Accordingly, the station was designated as a Pasture and Erosion Control Demonstration Station, which, it was hoped, would provide some visible proof that some methods were better than others. We designed tests that would develop information to help answer the many questions asked by farmers in the area and surrounding states. None of us ever thought we would receive the questions we did from Montana, California, New York, Canada, Australia, and other countries. Most of the questions concerned soils and tillage, pastures, cattle, and sheep; but there were also questions about our plans for the social development of the people. Expectations were great.

Optimism was not rampant, however, among many from whom we

sought suggestions. Many members of the staff of the College of Agriculture were reluctant to become associated with an undertaking that might lessen any reputation for sagacity they had achieved. One expert said the soils were "three-shower types." When asked to explain, he said, "It means that the land needs three showers a week; two of rain and one of manure."

Stockmen are usually optimistic, but a beef cattle expert with whom I had been associated many years said when he visited the station, "Why, Bill, you and Rusk and all the other people are supposed to know a little about the raising of cattle and sheep. If this was ever meant to be a beef-producing area, there would be cattle here now. The few that are around here are the most nondescript and unthrifty that I have ever seen. As for sheep, there are more dogs in Pope County than sheep. This is rabbit, squirrel, and snake country, and as far as the development of pastures is concerned, you won't be able to grow anything but sassafras, persimmons, saw-briars, broom sedge, and tickle grass, and they don't rank very high as nutritious feeds. You could make more money with some type of fermented sassafras tea or persimmon juice than you'll ever make from cattle."

I have long regretted he did not live to see an auction sale about 20 years later of more than 3,000 head of high-quality calves produced by area farmers. People living in the less-productive areas do not have moss growing out of their ears and lice dripping off their backs. Many become motivated to try to improve their situations for themselves and for the home-grown mothers of their naturally designed children.

I tried to convince my cowman companion that not all these people are foredoomed to poverty and to hell after death: "Most of them will never become wealthy, but neither will you and I as staff members of the University. But that doesn't mean we cannot enjoy life. All we are trying to do here is to learn if there are opportunities for some people to help themselves as we learn from our work and try to teach and help them.

"There are lots of things in America now that were not here when Jamestown, St. Augustine, and Plymouth were founded. Among those things are steamboats, locomotives, automobiles, cows, potatoes, sparrows, and you and me. Sure, some of these people won't do anything, but some may. I talked to one man about 50 years old. He said he didn't want to work any harder than he had been, and that making more money wouldn't help him get to heaven, for as he said, 'An admission ticket to heaven don't cost much, no how. I ain't like the feller who tried to scratch himself through the seven-year itch in three years.' "

My friend replied, "Well, Bill, you sure are an optimist, but right now I am inclined to agree with E. T. Robbins when he suggested that the $40,000 the federal government was to provide would be of most benefit to these people if it were in the form of nickels, dimes, and quarters, and just scattered around for the people to pick up as they looked for them, or saw some as they hunted rabbits, or were walking home from church, or were out walking with the neighbor's daughter. I don't think what you and Burlison and Rusk will get done will be of any more benefit than that would have been. The handicaps are just too great."

It is instinctive for animals and people to defend that which belongs to them and to protect their young. The Dixon Springs Station was in part "my baby," although up to that time others had greater responsibility than I.

"Now, in regard to these people being ignorant, we are all ignorant. A man in Warren County told me that those people at the University aren't any smarter than the rest of us; the only thing is you fellows make a living by working at trying to be smart, while the rest of us have to do the chores, raise the pigs, gather the eggs, and run the railroads. What anyone knows isn't enough to make him an idol for self-worship."

To that my friend replied: "There's no use trying to stop you. And Rusk and Burlison are just as stubborn as you are. So go ahead. But isn't there something for other departments of the college to do?"

I said to him: "I have heard H. P. say that any department is welcome to participate in the work, but it will have to finance its own contribution. Most thought it would be better to wait and see. Southern Illinois has produced a lot of fruit, but the Horticultural Department has said it is not interested in this project. There were many questions about dairy work, but so far we have only had three Brown Swiss cows from the Dairy Department for the use of the staff. Agricultural Engineering has helped with the design of some of the buildings, and Animal Pathology has cooperated with some difficulties with the cattle and sheep."

I am certain I did not change my companion's views. There is no fun in treating a dead horse, so I made myself believe that the old nag could be restored and we would win some of the races.

We were not always free from doubts about what wisdom we had shown when we got into some of our endeavors. On more than one occasion H. P. said: "Bill, if we decided to get out of this where would we start?" As time passed and some accomplishments began to become more evident and support from visitors increased, we thought we had not failed.

Dedication

The station had progressed to a point in the fall of 1938 where a dedication was appropriate. Dedications are the natural birthplaces of publicity for whatever is dedicated, and for those who christen, proffer, and accept. If the verbiage is carefully sifted and winnowed, some grains of wisdom are likely to be found.

Thanks were in order for the many agencies which had a hand in the establishment of the project. Some of the agencies had completed their contributions and had withdrawn. The Land Utilization Division of the Bureau of Agricultural Economics of the USDA was now in charge of the project. The Forest Service and the Soil Conservation Service had helped with the planning, and the Works Progress Administration had provided most of the labor for the development of the facilities the University would operate. Credit was due and given to these and other agencies in the mimeographed program, in which "The efforts of these agencies, focused on this small area," were acknowledged to have been "of vital significance to farmers and landowners throughout a large part of the central states, for similar problems prevail in an area comprising some 15,000,000 acres in Illinois, Missouri, Indiana, Kentucky, and other states."

The program, seven pages of information about some of the projects, maps showing the roads visitors could use to observe any projects in which they were interested, and maps showing highways by which the station could be reached were widely distributed before the dedication date. Trips to various parts of the 5,000 acres were listed as the morning part of the program. At each stop, staff members would explain what had been done, what was then being done, methods used, progress to date, and future plans.

The houses, barns, garages, administration building, and other structures were listed. A few additional structures were still to be built by the Works Progress Administration. Most of what the visitors saw was done between 1935 and October 8, 1938, the date of the dedication. The following were listed as the major accomplishments: 161 miles of boundaries had been determined; 80 miles of interior tract surveys had been made; 3,794 acres had been surveyed and mapped in detail; 15,000 acres of soils had been classified; and topographical surveys included 1,045 acres. Low-grade trees, brush, briars, and sprouts had been cleared from 750 acres. About 22,500 tons of roadstone had been crushed and used in road building, and 15,000 tons of agricultural limestone had been produced and spread on 3,500 acres as a first step toward soil improvement. Pasture development was

under way on 1,160 acres. One hundred and twenty-seven cattle, 527 sheep, and several hundred turkeys were being used in preliminary studies.

Six new houses had been built, and several others had been repaired. There were 17 new garages (including one that held eight cars at the administration center), five barns, four cattle sheds, nine sheep shelters, two brooder houses for turkeys or chickens, a warehouse, and a blacksmith shop. More than 50 miles of old fences had been removed, and 40 miles of new fences built. There were more than fifty devices for use in soil erosion studies. More than 15 miles of terraces and 17 miles of contour furrows had been made. One and a half million trees had been planted, including such species as pitch pine, short-leaf pine, white and red oak, green and white ash, red gum, tulip, black locust, and some black walnut.

Mention was made of plans for recreation, including a lake of about 85 acres of surface area. Water for this would come from a 1,400-acre watershed. The dam would be 975 feet long, and the spillway near the center was designed to carry 1,500 cubic feet of water per second.

The afternoon part of the program was held in a large tent. Several state and federal officials had been invited, and it was hoped that a thousand or more people would attend. An optimistic estimate is no more expensive to make than a pessimistic one, and the chief annoyance is certain to be for the ladies who provide the lunches. However, the ladies did not need to fret, for more than a thousand came.

L. E. Sawyer, regional land utilization director, came from Milwaukee to preside. He was introduced by John R. Clifton, the local manager of the project for the Bureau of Agricultural Economics. M. E. Ensminger, the local agent for Resettlement, was present.

Carl C. Taylor of Washington, D.C., gave the dedicatory address. In preparing his address, he had reviewed some of the local history, and did not seem to be pleased with what he considered short-sighted activities of many early settlers. They seemed to care little how they mistreated the land, as there was always more farther west.

It was disastrous for farmers in Southern Illinois to have used the land as many did; but had that not happened there would have been no need for the dedication of the station. Perhaps we are after all the main beneficiaries of earlier errors of others, just as preachers seem at times to be the main benefactors of sin although they profess to be, and usually are, against it.

Any lands which were not to be included in the station were turned over to the Forest Service and the Soil Conservation Service.

Dedication day — part of the crowd listening to the speakers.

Some of the dedication crowd at one of the experimental areas.

Stanley F. Wilson and R. H. Musser accepted these on behalf of their agencies.

D. B. Gates, a prominent farmer in Saline County, was asked to tell the Southern Illinois farmer's viewpoint. Since he lived in Southern Illinois and made his living from farming, he was among the more conservative and restrained in estimating future outlook. It is possible that he would now say his expectations have been exceeded.

H. W. Mumford had served as dean of the College of Agriculture before and during the time the station was being developed. He died in the summer of 1938 as the result of injuries suffered in a car accident. Professor J. C. Blair had then been appointed dean for one year, and he was authorized to accept responsibility for the station on behalf of the University. He assured the visitors their confidence would not be misplaced, but that the station would not be a panacea for all the economic and sociological ills of the country.

Among the materials available to the visitors was a report on the first feeding project with beef steers. In 1937, thousands of farms were flooded by the very heavy rains after the harvest season. Corn stored in cribs was badly damaged by water and was covered with mud. Some of this was taken to the station and put in a trench silo. It was then used along with other feeds to fatten cattle that had been bought on the St. Louis market. It proved usable in this way, but was not the equal of undamaged corn. With this spoiled and unmarketable corn, the project did seem to prove to many people that the station was concerned with their problems.

Not all of the questions visitors asked were about the work of the station. One visitor from the northern part of the state was interested in hunting. He asked one of the workmen what the people ate. He was told with great seriousness that blackberries were the main food in the summer, nuts and persimmons in the fall, rabbits in the winter along with some sow-belly and sweet potatoes till spring, when the diet changed to sassafras tea, a little molasses, sulphur, and green onions.

When he asked if the farmers allowed hunting, he was told that they did, but only after nine o'clock in the morning. He said that sounded like a funny regulation, and was told it wasn't a regulation, but an unwritten rule people followed because when they are up in the persimmon trees getting their breakfast they might get shot. If they get a greenish persimmon, they get all puckered up and can't holler to warn the hunters.

I never learned whether the man went hunting in Southern Illinois. I do know that the dedication summed up the work and promise of the station for the visitors that day.

The trench silo built in 1936 at the sheep barns could hold 300 to 400 tons of silage. It was first used to store flood-damaged corn in the spring of 1937.

Cattle at Dixon Springs turned the salvaged 1937 flood-damaged corn into beef in the first livestock feeding experiment at Dixon Springs.

Changing the Guard

It was not until 1941 that the University assumed full responsibility for the financial support of the station. Some of the funds were from federal appropriations assigned for use under the Bankhead-Jones Act to help develop new methods and to pay part of the costs of some teaching. After the Forest Service of the USDA assumed full charge of the lands, the University was given a Special Free Use Permit for experiments and demonstrations. Under the Special Free Use Permit, the University assumed responsibility for the maintenance of the buildings, but any that might be destroyed by fire or storm need not be rebuilt unless the University needed them and wanted to rebuild them. No new buildings could be built without the approval of the Forest Service. The roads, except state highways, would be maintained by the Forest Service. The recreational areas were the responsibility of the Forest Service. In the case of fires, the cooperative effort of all parties would be expected.

Important changes occurred in the College of Agriculture in 1939. J. C. Blair, who had served as dean for one year, reached retirement age and was succeeded by H. P. Rusk. On the day Rusk's appointment was announced, he and I left Urbana for the Dixon Springs Station about five o'clock in the afternoon. He knew the appointment was to be recommended to the Board of Trustees that day. I didn't know that. He asked me to get a car and meet him at his home. As I was doing that I was told of the appointment, and when we were on the way he told me that he wanted to get out of town while things simmered down after the announcement, as there were efforts by others to get the appointment.

When H. P. came out of his house, I greeted him by saying, "Hello, Dean. Golly, I didn't know I was to travel with a brand new dean." If he tried to hide his pleasure, he did a poor job.

On many previous trips we would drive long distances with little conversation, but on this one all I had to do was listen as H. P. reviewed the politics of academic promotion, about which I knew nothing.

When we returned to Urbana two days later, nothing had been said about whether Rusk would continue as chairman of the station committee, or whom he would recommend to succeed himself as head of the Animal Husbandry (now Animal Science) Department. The department head concerned the President and trustees, but the chairman of the station committee was handled by the dean alone.

Soon after the new department head had been appointed, and be-

fore Rusk had moved into the dean's office, he called several people into his office for the purpose of considering the situation at the Dixon Springs Station. I had assumed that the new department head would take over all of H. P.'s duties and be chairman of the Dixon Springs committee, but he had never been to the station and had declared he had little interest in the chairmanship. Rusk then said he had decided that Kammlade should be chairman, and that he and Burlison would remain as members of the committee.

There was no salary increase or prestige involved, and since honey draws more flies than vinegar does, the amens and hallelujahs were soon over, and the meeting adjourned. I left the office feeling that I had been handed the sack to hold, and most of those at the meeting thought there was little significance in my success or failure.

Soon after Rusk had moved into the dean's office, we met in the hall, and he asked me when we could discuss the Dixon Springs assignment. I said that now was as good a time as any, and we went into his office. I had thought a lot about the work at the station since I had been told I would be chairman, but I decided to keep my thoughts to myself until I heard what he had to say to me.

As H. P. filled his pipe, I said, "I see you are introducing a new atmosphere into this office. None of the three other deans I knew used tobacco. But as somebody has said, a pipe or cigar is sometimes associated with meditation and reverie, and with thoughts that breathe and words that burn. I guess I'm the first victim."

Rusk's face showed a faint grin, but he made no reference to what I had said. "I hope you appreciate being made chairman of Dixon Springs, and I want to caution you that you won't have an easy job. Dr. Burlison has been a member of the committee as long as I have, and much of the work at the station relates to soils and crops. Some think he should be chairman. He will support you, for he knows you did not seek the appointment and you will have my support, too, when you're on the right track. You will have to be careful not to say anything that will create ill-feeling, and you will find there will be a lot of personal and public relations if the station is to become of great significance."

I replied, "Hell, Dean, I won't say anything. This isn't a promotion. All it is is an opportunity, and since all the salary increases went with the other positions, what have I to say? I have never asked for anything since I came to the University, and I have no intention of starting now. I'll do the best I can, and when that isn't satisfactory all you need do is say so, and I'll quit. If I can now do what I hope to, Dixon Springs will be known and praised by people all over Illinois.

So if you asked me to come in to tell me to work hard and to try to make something unique of Dixon Springs, we are wasting our time. Some of the staff here won't think much of what we will do, but those we are employed to serve will. I have heard you say the University was not intended to be an asylum for the meek, and 'Uncle Joe' Fulkerson says that if you don't want to get run over by progress, get out of the way. In my opinion, Dixon Springs should not be dependent on many people at the experiment station in Urbana, but it should be distinct with its own staff, and as independent as any department, yet it should be willing to cooperate in studies and service. One of the worst possible things would be to have it over-administered. I intend to be a working partner. That won't be easy, for you have not said anything about relieving me of any of my duties here. I have heard some students ask when a certain professor would retire and sometimes the answer has been: 'Heck, he retired when he got the job.' Nobody will say that about me. I'm ready to go if you are. That's my attitude, call it anything you like."

The dean was not pleased with all I said, but he never expected me to say only what I thought would please him. He was never overloaded with compliments, but he had earlier said that he wished all his staff had been as frank and honest as I had been. "But," he said, "I must take a little credit to myself, for some heads of departments would not have welcomed some things you have said. I think you are right about administration, but I believe you will find it advisable to go down at least once every two weeks and to stay at least one day. Dr. Burlison and I will be interested in knowing how things are going, and we will both want to go down perhaps four or five times each year."

"All right, Dean, I think I know what I am to do. I have been interested in the station since our first trip in 1933. The first job we have to do is get the confidence of a lot of people in Southern Illinois. They are no different than other people, and when they get the toothache or bellyache it feels the same to them as to anyone else."

I left the office of the dean six years after our first trip to Southern Illinois to find a suitable area for some work, and four years after I had spent ten weeks in the area trying to get some work started. As I walked back to my office, it seemed as if I had been talking to myself, for what I had said I had often thought, and I seemed to be in the same condition as the sick man who said he would get well if it killed him. Later that day as I started walking up the front walk at my home, Mary asked where the car was.

It was at the office. I had walked right past it. If that was the start of being chairman of Dixon Springs, what would the finish be like?

If Dixon Springs could do that to me, what could I do to it? Maybe it was in good hands. I hoped so. I hoped we were still moving ahead in the work to help people by improving soil, water, plants, animals, and machinery; and above all by experimental testing, demonstration, and teaching, and by the participation of people in their own improvement.

Superintendent and Visitors

Statutes and pronouncements do not do the work necessary to conserve soil, produce crops and livestock, and improve the standard of living. These result from the innumerable tasks done by people who seldom attain much more than the food, clothing, and shelter needed during life, and a small wooden cross or a stone to mark their graves. For them to do the work requires some leadership, and that which is closest to them is usually best. A horse leads best when his leader is close by his head. So it is with people.

When simple buildings were being erected, fields laid out, and operations begun, some of the local men served as "straw bosses." Roy Phelps was chosen to lead a small group of workmen to get operations under way. He and his family lived about half a mile from one of the main roads, in a house at the brow of a hill with a beautiful view to the south, and Millstone Bluff visible in the north. A son and daughter both served the University later as members of the Cooperative Extension Service. Roy Phelps served but a few years, as he was killed when struck by a large tree limb while on vacation and working on a small place he owned.

As the work increased, foremen were appointed for field work, maintenance, machinery repair, and cattle and sheep management; and the effectiveness and understanding of all of them improved as they gained experience. Some continued with the station for many years, convinced that they were helping bring about the improvement so noticeable throughout Southern Illinois. The tasks necessary could not have been done without them.

In the summer of 1938, John H. Longwell was appointed the first superintendent of the station. He was a graduate of the Missouri College of Agriculture, and had worked at West Virginia and Washington colleges. He had come to Illinois for graduate work. He had not completed these studies at the time of his appointment, and a small laboratory was set up in the basement of the Administration Building so he could complete his work, which involved rabbits.

He and his wife, two daughters, and two sons were the first occu-

pants of the house that had been built for the superintendent near the Administration Building. Although it was not elaborate, apparently it was ample for the family.

The superintendent's job was a difficult one, and success was to a considerable degree dependent upon his serving at times as a working foreman as well as an observer and director. Since many tasks were strange to the men, it was often necessary to show them how the work should be done. An unfortunate accident on a sleety, snowy night cost the lives of several hundred ewes and lambs, and was widely reported in area newspapers. Shortly afterward, Longwell was recalled to work in Urbana. Some years later he became dean and president of the North Dakota Agricultural College, and later dean at Missouri.

For some time there was not a good organization of the Dixon Springs work within the experiment station at Urbana. There was no separate budget and no official recognition of the station at Dixon Springs as a distinct unit of the College of Agriculture, so those associated with the station could gain recognition. I insisted this had to be corrected. To do this meant that the equipment that had been sent to the station by any department at Urbana should become part of the Dixon Springs inventory; the academic and nonacademic staffs should become the Dixon Springs Station staff; and separately budgeted funds should be provided for its operation with the provision that receipts from sale of station products should be credited to the station, and not to departments at Urbana.

After the fears were allayed that Kammlade was trying to become a tin god of his own empire, the proposal was accepted, and, with the consent of the Business Office, the station was well on its way to helping Southern Illinois replace sassafras and persimmon sprouts, briars, and poverty grass with more useful products. The Dixon Springs Experiment Station became favorably known not because of the wholly basic character of the research work, but because of the general usefulness of its work, teaching, and demonstrations in which farmers could participate and improve their own farms.

When the vacancy in the superintendent's position became known there were several applicants. Among them was R. J. Webb, a recent graduate of the College of Agriculture. He had worked for a short time for a meat packer and had done some teaching along with graduate work for a master's degree. His home was known as Webb's Hill near Benton. His family had been interested in soil conservation, and had contributed toward the establishment of the Ewing Soil Experimental Field when the renowned Cyril G. Hopkins was stressing his program of soil fertility and permanent agriculture.

Webb was the youngest of the applicants. While the committee considered him capable and suitable in most ways, some thought he was too young. Several days after the interviews the committee met again. As chairman, I thought I should find out what the other two members had decided about the candidates. Since the dean could outvote both Dr. Burlison and me, maybe we should hear his ideas first. There were a few snickers, but I never had any fears of the dean overruling us unless we were in error. Rusk was filling his pipe, so Burly said, "Bill, I think we should have somebody about 40 years of age. Anybody between 25 and 30 is too young. Webb would probably be all right, otherwise."

Rusk had his pipe under full power and said: "It seems to me that Burlison has sized things up about right, and maybe we should take time to interview some others who have not applied."

I said, "Since your only objection to Webb is his youth, I can guarantee that it won't bother him long, for Father Time will take care of that without Webb putting in any more time on it than you two did. He may never get any better in any other respect, but he will get older a day at a time. Besides, if we are going to make mistakes, let's get started on the first one so we can be ready for those that are to follow. Let's put Webb on the job and see what he can do. As chairman I'll probably have to work closer with him than either of you, and if he turns out to be a dud, then we will know that 'to err is human' applies to us. But I think Webb is a good prospect, and with some more staff later you will be proud of Dixon Springs."

Then Rusk said, "Well, I don't agree with all that you said, but if Burlison will agree I will; and if we have to get a new superintendent, we can get a new chairman too." Burlison agreed.

When Webb was leaving to take over the job, the dean suggested that he visit all parts of the station each day, which was a big assignment. The area of more than 5,000 acres was not all together as a compact unit, but had some privately owned places within it. The distance from the Administration Building to the northwestern corner was 3½ miles, from there to the northeastern section was 6 miles, from there to the southeastern corner was 7 miles, with an additional 4 miles to the southwestern corner. Just getting to the various sections did not mean they had been carefully inspected. It was easy to overlook small areas, and sometimes it was necessary to make use of maps that had been made by federal agencies. After Webb had been at the station for two years, a man asked about renting a small piece of idle ground. He was told it did not belong to the station, but the man insisted. When Webb checked the ownership maps, he had to admit the man was

right. It was not strange that visitors became confused about the exact layout.

For a long time there was no secretarial help at the station. Letters were written by the staff in longhand. The collection of data from several hundred plots and from hundreds of cattle and sheep, along with the letter writing, somehow caused the superintendent to think he should have an assistant. J. M. Lewis began work in that position in 1943. After the close of World War II, the staff was further expanded. George E. McKibben was employed as agronomist in 1946; W. R. Boggess came as forester in 1948; and in 1949 H. A. Cate came in extension and as general assistant, and George F. Cmarik as assistant with beef cattle. In 1950, M. E. Mansfield moved to Dixon Springs to become research and extension veterinarian. R. E. Nelson joined the staff in 1951 as extension forester.

Many cooperated in planning studies, considering results, and especially helping with organized tours by thousands of visitors. Besides the many groups, there were many single visitors, such as representatives of newspapers and farm journals, and those from foreign countries. The press and journals were especially active in telling of the unique station, its development, and work.

One of the most effective helpers was R. F. Fuelleman, who was a specialist in pastures and forages in the Department of Agronomy at Urbana. It was not unusual for Fuelleman and me to leave at 4 a.m., drive the 225 miles to the station, help with a group of visitors, do other work, leave after dinner, and drive back to Urbana to meet with our regular classes the next morning. Often, though, we would stay at least an extra day, and frequently longer. His death in 1952 meant the loss of an enthusiastic worker.

Any consideration of visitors must include Sam Sorrels of Raymond, Illinois. Sam was not only a successful farmer, but a firm believer in cooperative efforts of farmers as a means of improving marketing and production. He never doubted that farmers could benefit greatly if they would study the work of the Dixon Springs Station. He was employed as a fieldman by the Illinois Agricultural Association, and worked mainly in the southern part of the state in support of the Producers Livestock Commission Association located at National Stock Yards, Illinois. Whenever he met with a group in a county to help plan the year's activities, he always stressed the importance of a tour of the station. Indeed, he was a great help in making the station into an effective institution.

Although I mention Sam Sorrels in particular, there were many others, especially extension workers and experiment station staff, farm

The station showed that with intelligent effort high-quality cattle and market-topping lambs could be produced in the area.

advisers, and many farmers, who not only helped, but through their suggestions and continued interest made contributions that will never be adequately recognized.

Occasionally some visitor would remark that the station had unlimited funds and therefore could do many things a farmer couldn't. I always tried to refute such ideas by making a speech — one of the best anesthetizing agents known.

"There is an error in what you say," I would begin. "The station does not have unlimited funds. Every staff member says there are not enough funds to do what should be done in his field. Your funds are limited; so are ours.

"In this country everybody has a chance to succeed. Some are more successful than others. There are always certain things in an undertaking that are beyond our control, but intelligent effort is the best way to overcome handicaps. Much land in Southern Illinois is not so productive as some in the central and northern sections, but travel about the United States and you will see millions of acres that are much poorer than here, and you will have difficulty feeling sorry for Illinois farmers.

"You and others can do everything the station has done. You can, if you want to, do it better. You have ownership, and along with that goes pride. The station depends upon hired workers. You can do much of the work and the thinking yourself, and you don't have to gather nearly as much data as we do. All you see here must be used with good judgment and personal attention. Limestone, phosphate, potash, and nitrogen will work the same for you as for us.

"One of the best fields at the station in Urbana produced 35 bushels of soybeans per acre. One field here first produced 3 bushels, but last year 33 bushels. In 1935, corn here yielded 13 bushels; now there are yields of 60 to 90 bushels and likely they will be higher in the future. The beef cattle pastures at Urbana gave gains of 300 to 350 pounds per acre. Bob Webb is already talking about 500 pounds here. Pastures can be improved, but they won't do it themselves.

"Over near Millstone Bluff there is a 20-acre field of alfalfa. That is 40 times the alfalfa acreage on the whole 16,000 acres assigned to the station when we began work. The soil would not grow alfalfa without treatment. After that we made 4 tons of alfalfa hay per acre. They brag about that large a yield in many places.

"The Secretary of Agriculture says this is marginal and submarginal land. Could it be it has been operated by marginal farmers, too? It won't be easy to be a successful farmer in Southern Illinois, but a good

farmer can do better on so-called poor land that has been improved than a poor farmer will do on good land. I am not scolding, but please think it over and let me know if I haven't told you the truth."

Certainly one of the more prominent visiting groups, the Board of Trustees of the University of Illinois held part of one of their regular meetings there in 1958, and listened to the staff report on some of the work. A short time before that visit a new dormitory had been completed. The work was done by local help. There was a meeting room to seat about 125, space for at least a dozen single beds, two private rooms for four people, baths, and a small kitchen. One of the main attractions to President Henry seemed to be the Pecky cypress walls in a lounge. The President and others were interested in the cost of the building, and when told it was about $22,000 complete, they were sure it would have cost three times that at Urbana. We always maintained that a dollar got more at Dixon Springs than at Urbana. I believed they were convinced.

A visit made by Dr. George D. Stoddard about ten years earlier when he was President of the University, and by Mrs. Stoddard, Provost Coleman R. Griffith, and Dean Wilbur Schramm of the College of Communications deserves a little attention. They and I had gone to Springfield where the President was to testify in support of the University budget. From there the others were to go to Carbondale for the installation ceremonies of Delyte W. Morris as president of what later became Southern Illinois University. I had not been invited to the installation, but President Stoddard said he was sure I would be welcome. I declined, as I had made arrangements to meet Bob Webb at Carbondale, spend the night at the station, and meet the President's company at Robbs the next day.

I was in the restaurant at Robbs when President Stoddard and his group arrived. When I came out he said, "Just as I told you; I said we would find Kammlade in the tavern, and there he is."

"Why, certainly, you didn't think I would work when I had the job of waiting for you. Come in and I'll buy you all Cokes and not put the cost on my expense account."

After that I introduced them to A. L. Robbs, and we then went south of Robbs to look over the proposed resettlement area. As we were standing there, Dr. Griffith, looking at the grass which was about 2 inches high, remarked, "This is a good pasture." When I made no comment he said, "Well, isn't it?" To which I responded, "We think it is reasonably good, but I think I can show you better pasture later."

On the way to the Administration Building, I stopped to show the group the "Wishy-Washy" area where there has been no improve-

ment attempted, and where they could see the type of vegetation that covered many of the fields when the station was started almost 15 years earlier. This intrigued the visitors, as nearby there were many manifestations of what we had been able to accomplish.

At the Administration Center, they inspected the building, met some members of the staff, and heard a few brief reports. President Stoddard was sufficiently well impressed to say to Schramm that he should have some of his staff make a movie of the station. "Make a good one," he said. "Put some money into it so it can be used to tell the story of what to me is an important part of the new frontier in agricultural work. I'm impressed. Aren't all of you?" They seemed to be.

We completed the tour of the station. At several stops they got out of the car and stood in grasses and legumes belly-high on the calves and almost hiding the lambs. When I said to Dr. Griffith, "This is what we call a good pasture," he said, "I see what you mean."

A few days later when I had returned to Urbana I met a member of the agricultural economics staff in Mumford Hall. Apparently he had been in conversation with some of the President's group. When I was still more than 20 feet from him he said: "Gad, Bill, you sure sold Stoddard a bill of goods."

"Larry Norton, let me tell you something. There is nothing so impressive, startling, and astounding as the truth, especially when you see it as you hear it. President Stoddard and his companions threw away their lanterns when they were convinced that they had found an honest man who let them use their eyes as well as their ears. Their conclusions were not prefabricated by me. That is what impressed them. Try it sometime." He smiled and walked away.

It was just another event in the story of Dixon Springs.

Help and Advice

None of the committee or the staff thought the development of the station was wholly dependent upon what would be learned there. Much work had already been done at other stations which we could adapt to our needs. If our soil tests showed an unfavorable reaction or the need for phosphate, potash, or nitrogen, previous experiments had shown what would be best to apply to make the desired corrections. But different varieties and species of plants had to be tested at Dixon Springs because their performance might differ in Southern Illinois and Urbana. Alfalfa is a very desirable crop, high-yielding and a nutritious

feed. The station had only a half-acre in 1935, and that was a sparse stand on a part of the Mount farm. There were more than 200 acres about 15 years later. This may have been hastened when I remarked that I thought it would be a good time for me to resign as chairman of the committee when the station had reached 200 acres of alfalfa. However, when the staff jubilantly reminded me of that, I denied making such a statement.

Many people helped with the agronomic matters, but most credit must be given to R. F. Fuelleman, W. L. Burlison, and George McKibben. Other agronomists who made significant contributions were Carrol Badger, A. L. Lang, Clyde Linsley, and P. E. (Pat) Johnson.

Among the earliest work with breeding cattle was an attempt to have the entire calf crop from about 200 cows be the get of one bull. A Hereford bull, Sergeant, was a prize winner at the International Livestock Show, and H. P. Rusk thought he should sire good calves. If all the calves were by the same sire, then the results of comparing rations with such a group of calves should be more significant than with calves of varied breeding. Dr. James A. Henderson, a veterinarian from the Animal Pathology Division, was sent to the station to handle the work of semen collection and insemination.

A corral, squeeze gate, head stall, and a sun shade were set up in one of the large pastures where the cows grazed and could be observed carefully to learn when they were in heat. Sergeant and another bull were kept in a small lot close by. When an observer on horseback spotted a cow in heat, he would cut her from the others, and she would be placed in the chute for insemination. Since it was necessary for Henderson to have some semen on hand from day to day, after a collection and insemination the left-over semen would be stored in the refrigerator at Webb's house. The use of frozen semen had not then been developed. After a few years, during which we never succeeded in getting a high percentage calf crop, the project was discontinued, and calf production left to nature. Dr. Henderson was most disappointed, for he usually managed to have at least a half day for fishing.

Veterinarians helped with other problems, such as the comparison of vaccines for brucellosis, internal and external parasites of cattle and sheep, bloat, and the treatment of injuries. Dr. Jesse Sampson was the leader in the diagnosis of listerellosis in sheep. Dr. M. E. Mansfield became the station veterinarian in 1950. Besides his work at the station, he did a great amount of extension teaching, encouraging producers to observe all the sanitation measures possible so they could "fence out disease."

The first twenty-five years of the Dixon Springs Station were indeed unique. This unusual pose, for cattle, of Advance R. Domino typifies some of the unconventional and usually unreported activities that went on. They often enhanced the station's development by bringing about happy attitudes, enthusiasm, and harmonious *esprit de corps*.

Although almost 2,000 turkeys were produced successfully during several different years, the project was discontinued because of little local interest.

The corrals for sheep were enclosed by a seven-foot-high woven-wire fence. Wires were placed in the ground beneath the fence to prevent dogs or other predators from digging their way into the corrals. The gates were also high, and had buried wires. In spite of these precautions, 48 sheep were lost because of rabies when a rabid animal got into the corral one night. How did he get in? Through an open gate. The superintendent agreed with me when I told him it was very doubtful that a dog-proof fence was dog-proof when the gate was left open.

H. H. Alp was the leader in a turkey project. Poults were bought and delivered to the station when they were a few days old, and then kept in brooder houses until the weather was warm, when they were able to thrive on outdoor range. A small slaughterhouse was built, and the birds were killed, dressed, and sold at Thanksgiving and Christmas time. A flock of 2,000 turkeys attracted a lot of attention, but few people in Southern Illinois were interested in engaging in commercial turkey production, and the project was discontinued when Professor Alp left the poultry division of the College of Agriculture.

R. R. Snapp, a cattleman in the Animal Husbandry Department, was never convinced that cattle could be raised successfully in Southern Illinois; nevertheless, he did make important suggestions regarding management and other items. There are now hundreds of cattle in Pope and adjoining counties where there were ten or a dozen in 1935. The increase probably would not have happened if the people did not believe what they saw at the station.

H. W. Bean, Dr. L. E. Boley, Harry Russell, G. R. Carlisle, Fred C. Francis, and H. H. Gordon, all contributed to the work, especially to the animal studies. All but one of the above list had, more or less voluntarily as students, submitted their intellects to my tutelage and escaped unharmed.

The development of the station was pretty much a masculine operation, but Leah M. Dunn, who served as secretary for the station, excelled in her superb service. Another woman who had an important role was, of course, Mary B. Kammlade. In fact, she had more roles than I have time or license to mention.

The Forest Service of the USDA was always helpful. When the Department of Forestry was started at the University in 1938, forest management took on new significance as an adjunct of the station. In 1933 there were no deer in Pope County, but later the Forest Service introduced some, and during a period of about 20 years, when it was illegal to hunt deer, they made a remarkable increase in numbers. Hunting is now authorized by the State Department of Conservation, and Pope County probably has the largest deer population of any

county in Illinois. The committee has never had any direct responsibility for wildlife, except to cooperate in its promotion in any appropriate way. We did sometimes wonder about the possibilities of mink and muskrat raising, especially when we were told of how a few of these animals thrived in the area.

All the departments of the College of Agriculture have advisory committees. Such a committee was suggested for the station, but was not made mandatory. Without a committee we could use suggestions from anyone if it suited our purposes. We realized that this put us in the same position as the two bums when one said to the other, "Shake the hand of a man who never took anybody's advice." The other said, "Shake the hand of a man who took everybody's advice." [In 1975 an advisory committee was established for the Dixon Springs Agricultural Center. See appendix.]

One of the unique examples of help came from the Egyptian Livestock Association. Sales of their feeder cattle had been held at the station for several years. To accommodate both sellers and buyers, larger facilities were needed. Instead of asking the station to provide them, the association supplied much of the material for the pens, helped build them, and then gave the University $3,000 to build a sales pavilion. The legal counsel was skeptical about some of these things, but approved. The cattlemen were just helping themselves and showing appreciation for help they had received. There were many other similar situations, as Dixon Springs continued to receive the support of people who lived nearby or far away.

To and Fro and Off-Hours

A travel ad proclaims that "getting there is half the fun." It doesn't mention returning, but that should be included.

Most of the trips I made to the station were in company with one or more men, but trips by myself were frequent. The former were most enjoyable. For more than a dozen years my most frequent traveling companion was R. F. Fuelleman, who was so full of quips and witticisms and amusing pranks that he was a delightful companion. When anyone was making his first trip to the station with "Doc" and me, we would impress upon him how fortunate he was that we were willing to have him get the outstanding benefits of even a brief association with us. Usually before we would reach the station, "Doc" and his "erstwhile colleague," as he often called me, would induce the recruit into a betting session.

Rabbits were our choice betting subject, and bets would be about the number of rabbits we would see, generally from south of Harrisburg to the dormitory. Evenings were our favorite time for this feature. Whoever had guessed the number closest to the number seen was the winner. We always insisted, as a matter of courtesy, that the neophyte choose the first number. If he said three, then "Doc" and I would say two and four, giving the man with three only one chance to win. One time a new bettor bet that we would see no rabbits. He lost because it is impossible to see no rabbits.

Sometimes we would bet on the number of bridges between two towns, or crossroads, or the number of houses on the east or west side of the road between two places such as Louisville and Flora, or the number of cars that would be parked in a certain block in one of the places we would drive through. What our companions did not know was that "Doc" and I would collect data for the fall betting season when we were alone. This we would record in our pocket diaries, and by referring to them, we seldom lost.

It was not so easy to win when we bet on the last number on the license plate of the next car we would meet, but "Doc" once won seven ice creams before our victim won one. When the winner said we owed him one ice cream, "Doc" said, "Oh no, you just buy me one less."

Once we bet on how far we would drive before we would see a crow fly across the road in front of us. As we left Harrisburg, there were five in the car, and the distance to Champaign was 184 miles. Mileages chosen were 50, 75, 100, and 150, with one bettor saying we would not see another crow fly across the road. Many crows were seen on each side of the road, but none crossed during the 150 miles. This meant four losers. The other bettor was much elated as he was sure he would win, but when we were within three miles of Champaign a very nice crow obligingly flew across the road a short distance in front of us. That is the only time I recall when we had no winner.

A car was our usual means of travel, but there were times when we drove pick-ups, Jeeps, and trucks in which we often hauled everything from blood samples, seeds, and furniture, to samples of forages and soils. On one trip home we crossed the railroad tracks at Fairfield and a carton of blood samples bounced out of the trunk. Someone found them and mailed them to the Veterinary College at Urbana after calling Dr. Graham to learn if the samples were intended for the laboratory.

On one trip we left the station with five big rats we had caught in an attempt to find out if rats carried the agents that caused listerel-

losis in the sheep flock. All the rats were in one large wire trap in the trunk of the car. As we drove along we would hear squealing. When we reached Urbana we had one big rat and the bones of four others.

Restaurants along the route, especially during the first ten or twelve years, were not fancy supper clubs. Usually the menu was listed on a small blackboard, and soup, sandwiches, pie, and coffee would be the offering. Once, after the usual question as to what kind of soup do you have today, and the waitress said "Ox tail," "Doc" said, "Cripes, that's going a long way back for soup." Burlison once asked, "Do you have frog legs?" The waitress answered, "No, but we serve them." We were not credited with much intelligence when we would ask, "What kind of apple pie do you have?" Occasionally, we would put some catsup on our ice cream or pie just to see the reactions of other diners.

On one trip we had three yearling Hereford bulls in a pick-up. We stopped in Harrisburg for lunch and parked the pick-up in front of the cafe. When we came out of the cafe, a man was standing by the truck looking intently at the bulls. When I asked him if he would like to buy a bull, he looked somewhat disgusted and said, "What in hell would I do with a bull?" When I asked him if he understood about cows, he shook his head, spat in the gutter, said "Nuts," and walked off down the street.

A prank involving Webb's Scotty dog and some Granger Twist tobacco developed as, en route to the station, we had stopped at a restaurant where many kinds of tobacco were sold. We purchased a roll of tobacco, and as we drove on, planned how to make effective use of it. The final plan depended upon an invitation to Webb's house for dinner. Some one of us was to place the Granger Twist back of the chair where Pickademus (the Scotty) slept when the Webb's would not notice the act. We would call attention to the deposit at an appropriate time after dinner.

We were not mistaken in assuming that Pickademus would be vehemently scolded and ousted from the house when Mrs. Webb discovered what would look like a Scotty's failure to remember he had been house-broken. When table clearing was being done, the discovery was made and Pick was sent out into the night in disgrace. When it was found Pick was not to blame he was forgiven, and any indelicacy was far exceeded by the hilarity.

Work often continued until dark. After dinner there was time for a few hands of bridge or perhaps a few rounds of poker. The salaries we received didn't permit high stakes, so the "take-home pay" was never enough to interest any part of the law enforcement agencies.

It is probable that clergymen would have been interested mainly in the anti-social character of a special type of poker L. E. Boley introduced. It was called "Beat Your Neighbor." He usually did.

For some years when the station was being started, revival meetings were held at Glendale at a "brush church" which was made of some poles and cross-pieces on which some tree branches were laid for shade. Wooden benches served as pews. I attended only once and there were no conversions that evening, but I was told that at one meeting the community sinner had confessed, after which he was asked to say a few words and to pray. His prayer was reported to have been: "Lord, give each of them that are here a barrel of flour. Give each of 'em a barrel of beef and a barrel of pork and a barrel of pepper." Then someone heard him say in a low voice: "Hell, that's too much pepper."

I give this sampling of some extra-curricular activities to show that enjoyment was found in most tasks, and that progress was not hindered thereby. In fact, it was probably this spirit of companionship which contributed so much to the morale of the staff that caused many visitors to remark about the *esprit de corps,* and the fine cooperative interest and effort. Every trip was for work. Fun was incidental, but a vital factor in many of the events associated with the establishment of the Dixon Springs Station for human as well as soil improvement.

Gathering Data

A day seldom passed when some notation about soils, plants, climate, or animals was not entered in the record books carried by members of the staff. All during the growing season, and often at other times, observations were made, or samples were gathered and weighed or put away for later study of the plants growing on the hundreds of test plots. Rainfall, run-off, soil losses, degree of grazing, and their effects were part of the mass of data collected at the station.

The birth dates and weights of calves, the number of the cow, and observations as to sex, condition, and so on, were among the data entered in the record books of E. W. (Shorty) Bailey and Oakley Robinson. Shorty had all three dimensions of breadth, thickness, and height, but not much of the latter. He was generally happy and always faithful in his work, but not always pleased with delays in receiving his pay. At one time he had not been paid for three months. He had spoken to me about it several times, but my contacts with the business office had not produced results. Near the end of the three months he

again told me how desperate things were, and I was sure they were bad when he told me he had to keep the big kids tied up to keep them from eating the little ones. When I reported that, his pay was expedited. Oakley Robinson was about the size of two Shorties and also rode the range looking over the pastures and seeing to the needs of the herds.

Cattle round-up was always a November job, as the calves were then old enough to wean, and it was time for the cows to have a chance to give their attention to the gestation of their next offspring. At round-up all the cattle were run through the chute, carefully examined, and the data recorded. Blood samples were drawn to check for various diseases. There were also tuberculin tests, examinations for pregnancy, and so on. After all this was done, the calves would be sorted and placed on the different rations to be compared for efficiency and economy of gains. The cows would be culled and the undesirables sent to market.

Cattle round-up took the time of much of the staff, and a number of men from Urbana always helped. With the start of the Veterinary College, the students found an opportunity for some preliminary practice under the guidance of experts who seldom have to stick a needle into the neck of a cow more than ten or twelve times to find the jugular vein. I think Dr. Boley helds the record with 17 on both sides of the neck. All the disturbance and work was just evidence of the truth of the statement of the old New Mexico cowman who said, "Son, you can't raise these damn cattle on Main Street." There are always opportunities for the use of judgment when it comes time for such duties as the selection of bulls. This was confirmed by a profound remark made by Dean Rusk when bull selection was under way and two bulls were being considered, one of which was a very good individual but was a shy breeder; the other was much less desirable, but was considered a sure breeder. For the uninitiated, "shy" has nothing to do with timidity, but refers only to the ability of the bull to "settle" cows, which means cause them to become pregnant. After full consideration of which bull to keep, the Dean said: "A calf by a poor bull is better than no calf by a good bull."

There were comparable events associated with the sheep project, but the sheep industry has never attained the glamor and romance of the cattle business. Since sheep are easier to handle, none of the work attracted or required the same amount of participation as round-up. To have an enterprise comparable to that of 100 cows meant a flock of 500 to 600 ewes, and few farmers cared to maintain such flocks. A hundred years ago Illinois was considered an ideal area for raising sheep, but they are sometimes subject to what seem to be peculiar

troubles; dogs are a menace, and the dislike of shearing and handling the wool made a big flock have little attractiveness for many Illinois farmers. In fact, one told me that he didn't care about the golden fleece, and he wouldn't raise them even if they had gold-plated intestines.

Two thousand ewes was a larger flock than most people in Pope County had ever seen, None had ever had any experience in the management of such numbers. The men assigned to be responsible for the sheep soon developed skills adequate for most tasks, although for some years professional shearers were employed to help with that job. I can never understand why criminal court judges sentenced men to so-called hard labor such as breaking rocks when there was shearing to be done.

Several extensive studies involved internal parasites that are common causes of difficulties where sheep are run on pastures in humid areas. No medicinal treatment was fully satisfactory, and this meant many management practices had to be carefully studied. However, some carloads of choice fat lambs were sent to market under such conditions, and often the sheep project returned a high percentage on the investment in the flock. While I mentioned dogs as a menace, some well-trained sheep dogs such as Border Collies were great allies in many operations. As in the case of the cattle, a horse was a great step-saver.

There was seldom anything exciting about the job of gathering data, but it provided a valid basis for decisions and was used in the reports of the work that was done. The data and the conclusions that could be drawn from them did form the basis of progress.

Delinquents

Few people would expect a station designed to study the problems of soil erosion, conservation, and improvement, and the production of cattle and sheep, to become involved with juvenile delinquents. I know I did not.

As part of the Illinois Youth Commission's program, youth camps were established around the state in the early 1950s. In Illinois, boys who are less than 18 years of age and have committed some crimes may be assigned to the custody and care of the Illinois Youth Commission. One of the youth camps was near the Dixon Springs Station. The boys worked under a supervisor, and most of the work was aimed at restoring and improving the Dixon Springs Park. There was a lot of leaf raking, made-work, which had little appeal to the boys.

The cattle producers were planning a feeder calf sale, and the only facilities at all adequate to handle about 500 cattle were at the station. Extra help to build pens was needed, so Webb spoke to the supervisor of the boys about the possibility of having some of the boys help before and during the sale. This was arranged, but anything relating to the cattle was strange to the boys, most of whom were from cities. Not only was the work new, but they had no understanding of terms such as heifer, steer, polled, choice, common, Hereford, Angus, and so on. One boy wanted to know what a Hereford steer and heifer were, and how to tell the difference. Later he wanted to know, "Are there steers and heifers in them Angus, too?"

The boys were very helpful, and later the possibility of the station providing more work was discussed and then arranged. The station would have no responsibility for the boys, as that was the duty of the Youth Commission. The station would provide only tools and transportation. Since it was in the fall of the year, shelter could be arranged in a building at the station. That shelter would not be suitable in winter, however, and if the station would provide materials and some guidance, the boys would help build a suitable building for themselves. Since we figured the boys would do work worth from $5,000 to $10,000 a year, we thought we would be justified in asking for $3,000 to erect such a building. The supervisor agreed.

I contacted R. R. Hudelson, who was then serving as dean at Urbana, and suggested that a report be made to Lloyd Morey, President of the University. A report was not considered necessary by the dean, so I proceeded to prepare a request for a nonrecurring appropriation of $3,000 for the building. This was forwarded to the president, who sent it to the committee that considered all such requests. The committee was willing to recommend approval if the use of funds for such a purpose was not in conflict with University policies. That got the request into the hands of the legal counsel.

Hell may be paved with good intentions, and I thought I surely would be traveling the pavement before we were through. We were involved with the Youth Commission, the Attorney General, the University President, Provost, Comptroller, legal counsel, deans, and sundry mortals of less formidable powers. Administrative authorities seem somehow to appreciate those who from time to time justify the need for administration. Some of these administrators didn't know there was such a fellow as Kammlade around before my request. I never before had a telephone call from the legal counsel, but I was told that the University was not established to rejuvenate juvenile delinquents and other criminals. He said that the reclamation of such

people was wholly assigned to other agencies, and what I had proposed could only bring criticism upon the University. It might easily be the worst criticism the University had ever received. He feared that some of those boys might run away from camp and commit all kinds of acts against men, women, even children. The only way such young men could be permitted on the station was for the Youth Commission to negotiate an agreement with the University that would relieve the University of all responsibility for any of their acts, and for any injuries that might happen to them while working at the station.

I was about convinced that the salvation of my project was doubtful, but I wrote, "In regard to one of your questions as to why I did not clear the matter with your office before the boys did any work at the station, I can only say that my responsibilities do not extend beyond the College of Agriculture, as beyond that anything I do must go through channels. If it were not for people who make mistakes, those trained in legal matters would have little business.

"Now as to the University and the rejuvenation of wayward youth, I am sure you will admit that the University is now doing many things for which it was not specifically established. All of these things are done under the broad charter of the University as an educational institution. We cannot be certain that these youth are delinquents because the University has somehow failed. Presidents are fond of saying that the whole state is the campus and the world is its laboratory. But I'm not primarily interested in rejuvenating anybody. I'm interested in getting some work done, and I believe that the boys can do some work at the station that will have some beneficial effect on them. What is wrong with the University doing something it has not done before? But that is incidental. I'm only interested in getting some work done."

Shortly after my letter to the counsel, President Morey called me at my home one evening and asked me to go to the basketball game with him as his guest. I had bought tickets for all the games, but I had given the tickets for that evening's game to some of the stenographic staff at my office. When I reported that to Mr. Morey, he was sure I could change my mind. I did.

Being of an unsuspecting nature, I thought the President was just being kind to a member of the faculty by selecting someone to be his guest at each game, and that my turn had arrived. During the intermission I found out that was not what he had in mind. Some of his remarks were not complimentary, but they were made with the usual effort on his part to keep things in balance, as he was so accustomed to doing in dealing with assets and liabilities as comptroller before he became president. There was no doubt in his mind that I had placed

the good name of the University in jeopardy. Any of the boys might run away and steal, destroy property, assault women, or commit a great variety of crimes. If they did, the University would be blamed.

I argued ineffectively that the station had a small budget compared with the work to be done, and that we might be justified in some unusual risks. No more effective was my statement that some reprehensible deviations from good conduct had occurred on the Urbana campus where the University would be wholly to blame, but at the station the blame could at least be shared with the Youth Commission. My insistence that the law said the Youth Commission was wholly responsible for the boys assigned to it failed to change President Morey's attitude.

It was a good ball game. Illinois won. The fate of our relations with the delinquents would be left to the legal counsel. This involved conferences on the campus and some trips to Springfield. When the time of my retirement as chairman of the committee came, the matter was still not settled, but we did get considerable benefit from the occupants of the camp.

I was informed later that an agreement was developed and the boys were still living at what was called "Shawnee Boys' Camp." So far as I can learn, the good name of the University has not been damaged, and some of the boys may have benefitted. [The boys' camp was moved about April 1, 1970.]

Aftermath and Gleanings

Harvests are always followed by a few glances at the horizon.

The first 25 years of the Dixon Springs Experiment Station included World War II, other conflicts, greatly expanded governmental activities, increased costs and debts, the technological revolution, and the population explosion.

There were many great events, but probably few have had more significance than the developments in farming. Many of these are hard to glamorize because they relate to what man has done for many centuries; that is, produce food. Our technology has created new methods to get more bountiful results from the natural processes of plants and animals.

In 1933 there was less modern technology in Southern Illinois than in other sections of the state. New technology required the use of newer more sophisticated machines, and what better way to introduce them than through an institution that was designed for that purpose?

Corn harvesting is an example of the sort of change that has taken place. For many years the gathering of the corn crop was a hand operation, but even then there was some technology — simple, to be sure, but the hand was assisted. The basic tool was the husking peg, a thin piece of metal about 5 or 6 inches long and strapped to the hand. The pointed working end opened the husks at the tip end of the ear and pulled the shucks to the base of the ear. The ear was then broken off from its base and tossed into a wagon box. The peg cost 25 to 50 cents. A team of horses or a span of mules costing from $300 to $600 pulled a $150 or $200 wagon. When the box was full of corn, the man who had filled it drove to the crib, where the corn would be stored. There he used a $2 or $3 scoop to unload it and put it into the crib a scoopful at a time. That was most of the equipment used, and all except the husking peg could be and was used for other purposes too.

Today the husking peg has been replaced by a $5,000 to $10,000 corn-picker or picker-sheller. The team has been replaced by a $4,000 to $6,000 tractor to pull the wagon, which now costs $1,000 or more; or by a $6,000 to $10,000 truck. The scoop has been replaced by a $1,000 to $1,500 power-operated elevator to put the corn into the crib, if it isn't taken by truck directly to a cooperative or privately owned elevator for sale or storage. Such costs, of course, cannot be assumed unless they can be offset by greatly increased efficiency, expanded operations, and increased prices. Since many pieces of equipment are not useable for operations other than those for which they were specifically designed, there are often long periods when expensive farm machines are idle.

As costs increase, farms become larger and the number of farms and farmers fewer. I have wondered many times how many are benefitted without others being deprived in some way. Of course, in a mobile society the latter may seek opportunities elsewhere, but they may not be skilled to meet the other job requirements. The entire population of Pope County is less today than the number of school children there forty to fifty years ago.

The mention of population brings to mind the constant talk about the danger of the world's population becoming too great for the food-producing capacity of the earth. Through the efforts we made in establishing the Dixon Springs Station, we hoped to help increase the world's food supply. At the moment, the great increase in the highly productive areas has apparently lessened the pressure for an increase in areas such as Southern Illinois. There is also considerable emphasis on using part of the area for recreation. But there seems little doubt that efficient food production is going to be needed.

As I glance over what I have written, I am dismayed by how much I have omitted, but I am sure what I have written is sufficient to give an insight into our thinking, some of our difficulties and successes, and the persistence and wisdom of Mumford, Rusk, Burlison, and many others from the University of Illinois, and from agencies of great variety in Illinois and in the federal government. Certainly mistakes were made, but they were greatly exceeded by correct choices and decisions.

In these few final musings I make no attempt to anticipate what the future will mean for many of those we helped with their great variety of farming operations. Certainly they must be willing to adopt more promising methods of farming. That is also true for the experimenters at the Dixon Springs Station. Out of this comes progress.

The aftermath of youth is age. Age brings change, and the more of age in a man the less of life remains. A part of the aftermath that is age was my withdrawal from direct association with the station and with many people of Southern Illinois. Any further contributions to their welfare which may be gleaned from the pursuit of Demeter and Ceres, I leave to other and younger men. I applaud the pursuits of all my associates. I believe Demeter and Ceres were pleased, and they have my thanks for an abundant harvest of enjoyment and memories.

The Heritage

Redeemed

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Preface

Many helped tell the story that follows. Though it has been my business for the past 26 years to know and disseminate information on all facets of the Dixon Springs Agricultural Center, I could not have adequately assessed the Center's influence without hearing others tell it. To them I am grateful.

I used very limited amounts of statistical data from census reports in writing this story. Such information does not untwine or even hint at the many forces woven into the fabric of change; it merely establishes levels of change at given periods and requires great stretches of imagination to assign the causes of change. Only people can tell how particular forces or learnings affected changes in their experiences. Only people, not statistical information, can reveal the feelings of hope, faith, satisfaction, and many other personal attitudes. It is these feelings and attitudes that I attempted to capture in many interviews and letters obtained during the spring of 1975.

I am especially grateful to M. E. Heath who not only wrote very helpful letters but also sent taped interviews that he had made with others.

In gathering information for this story, I read many letters, documents, and research reports. Thanks to Mrs. Leah Dunn Linse, former Dixon Springs secretary, whose splendidly kept files eased the work of this background research. I also found the notes and writings of W. G. Kammlade indispensable to the proper telling of this story.

Mrs. Alice Ledbetter assembled the bibliography, transcribed hundreds of pages of notes from taped interviews, and typed this manuscript. She has my special thanks.

Without the work and help of the entire Dixon Springs staff, this story could not have been told. A special thank you goes to J. M. Lewis who furnished much helpful material and arranged for and assisted with a number of the interviews.

I am grateful to C. J. Kaiser, Center Director, who encouraged and supported me in many ways in this work.

My wife Carmen has my special gratitude for her patient help in the reviewing and editing of this manuscript. — *H. A. Cate*

When Southern Illinois Was Illinois

Illinois is a long state. Soils, climate, and even people differ greatly from north to south. A 400-mile drive from its northern border to the Ohio River takes you half the distance to the Gulf of Mexico. Two-thirds of the land area of Kentucky lies north of the latitude of Southern Illinois where the University of Illinois College of Agriculture administers the research and extension programs of the Dixon Springs Agricultural Center.

Just south of Harrisburg, rocky, forest-covered hills of the Ozark uplift rise from prairie land and band the state from the Ohio to the Mississippi Rivers. This 25-mile-wide belt of unglaciated hills contains the Shawnee National Forest. On Forest Service land in Pope County, ten miles from the Ohio River and on the southeast watershed of the uplift, the Center uses nearly 5,000 acres of gently to steeply sloping soils for research and demonstration.

Here, spring comes early and winter restrains its bite. A gambler will give you even odds that the last freeze of spring will occur before April 12 and similar odds that the first hard frost of fall will delay until after October 24 — 200 days for plants to grow and mature. The mild winters allow even more days for grass to grow and feed livestock. On the average, temperatures drop to zero or below only one day a year. Night-time freezes usually thaw the next day. Snowfall totals about 10 inches a year. However, the average annual precipitation, 46 inches, is 50 percent more than northern Illinois gets. Summer rains equal those of northern Illinois; the excess falls in winter and early spring.

This is the climate and terrain within which the Dixon Springs Agricultural Center operates. The Center sprawls five miles north to south and the same distance east to west over meadow, forested hills, and creek bottoms. Approximately 200 miles of fence, enough to stretch from Dixon Springs to the Urbana-Champaign campus, divides the area into 215 large fields, small fields, and test plots. Thirty-four small lakes and ponds dot the sprawl.

Some call Dixon Springs the "south campus" of the University. Others call it the University's huge, outdoor laboratory. Each year hundreds of students in agriculture, forestry, botany, and zoology use the Center for field trips and study. The varied land forms in this

sparsely populated area support bountiful plant and animal life in a natural, undisturbed environment — an environment which favors plants and animals of both the northern and southern United States.

In this middle ground between north and south, a wide variety of grains and forages grow. Crop and animal pests — insects and diseases — of both areas also thrive. The soils, terrain, weather, and other natural conditions at Dixon Springs are similar to those of an estimated 15,000,000 contiguous acres in Illinois, Indiana, Ohio, Kentucky, Tennessee, Arkansas, and Missouri. Many thousands of farmers in these areas have applied the lessons learned from the research and demonstrations at Dixon Springs. This huge, outdoor laboratory has a vast outreach.

The College of Agriculture Departments of Agronomy, Animal Science, Forestry, and Horticulture, the College of Veterinary Medicine, and the Illinois Natural History Survey have, in the past 40 years, researched the agricultural problems of this once cropped-out, washed-out land area. With interdepartmental cooperation, parts and pieces of research have been put together to form agricultural systems and land-use programs for the benefit of farmers and society.

Prior to 1935, approximately 150 years of American history went into the making and losing of agricultural fortunes in the hills of Southern Illinois. Except for early French settlements, primarily along the Mississippi River around St. Louis, the wooded hill country of Southern Illinois was the first part of the state to be settled. Frontiersmen from Virginia, the Carolinas, Kentucky, and Tennessee judged these timbered hills suitable for settling their families. They moved in during the late 1700's and early 1800's. George Rogers Clark waged the colonists' war in the west and in 1778 wrested the area from the British by taking and occupying the old French forts at Massac, Kaskaskia, and Vincennes.

The new settlers found that the woods abounded with deer and wild game. Numerous streams and springs ran clear and cool to refresh both man and beast. Massive trees afforded wood for cooking and warmth and material from which to build homes, furniture, and tools. The wooded hills offered winter shelter and protection. The growing season was long. The rainfall was plentiful, and the soils and climate favored a varied agriculture from fruit and vegetables to corn and wheat. This was good country. It amply supplied the needs of the early settlers.

The Ohio River, the main avenue of entry into southern Illinois, floated entire families, household goods, tools, and livestock on rafts and flatboats to favorable landings. The river continued to serve the

pioneers. It brought in supplies from the east. Two great rivers, the Ohio and the Mississippi, furnished river shipping for farm produce. Even before the Revolutionary War, water commerce was being carried on by the French settlers. It is little wonder that Southern Illinois was settled before the open and stark prairies of the state.

By 1810 the population of Illinois exceeded 12,000, increasing to 55,000 by 1820. When Illinois became a state in 1818, with the capitol at Kaskaskia, most of the people lived in the southern third of the state. The Shawneetown Bank, established in 1816 and the financial center for the whole northwest territory, once refused a loan to develop Chicago because, "Chicago is too far from Shawneetown to ever amount to anything." Southern Illinois WAS Illinois.

In the days of the pioneers, farms were small — 70 to 80 acres — but as large as a man could clear and tend with his crude hand tools and oxen. Corn was the principal crop and the principal food. The fodder fed the livestock. The grain, ground in the home, made cornbread, corn pone, johnnycake, and corn whiskey. Protein foods were shelly beans, wild game, and fish. Pioneers bartered for the needs they did not produce at home.

With the advent of the steam engine, steam-powered mills, and the McCormick reaper, Illinois, after 1850, became an important wheat-producing area. The agriculture shifted to a wheat economy, and barter gave way to cash trading.

Wheat and the change from a self-sufficient agriculture to a commercial agriculture brought wealth to many farmers. The large, imposing homes, some still standing, attest this agricultural prosperity. However, as farmers grew richer, their soils grew poorer. More and more acres were cleared of tree cover, and increasing amounts of marginal lands were brought into cultivation. High wheat prices during World War I encouraged heavier and heavier cropping. From 1910 to 1920, wheat production increased by 50 percent.

Following 1920, as Europe rebuilt its war-torn agriculture and set up trade barriers against imports, the American agricultural export market dried up. Prices fell. To compensate for lower prices and to meet the expenses and debts of an overly optimistic expansion spawned by the better days, farmers resorted to even heavier cropping. But the land did not respond. It was worn out, depleted, and eroded. Ironically, the very river that had carried the first settlers to this promising land had also carried their wealth and livelihood, the soil, to the Gulf of Mexico. Streams and springs became seasonably and alternately roaring, muddy floods and then dry, rocky beds. The timber cover for wild game was gone.

Five hundred years before Christ, the prophet Jeremiah warned the children of Israel that they could not long disobey the laws of God without punishment. Nor can man long disregard the laws and forces of nature with impunity.

There were no new lands on which to move. The frontier was gone, and farmers were experiencing a depression at least a decade before the rest of the population, then enjoying booming business, became aware of the plight of farmers. Farm foreclosures and abandonment of wasted acres became common. Farmers just couldn't pay their bills and make a living.

Nature has its way of reclaiming land from the ravages of misuse. In the hill country of Southern Illinois, broom sedge, sassafras, persimmon, and hickory sprouts anchored their roots in the thin soil. But nature's way is slow, taking 500 years to build an inch of topsoil. And for man, sassafras and persimmon furnish little profit.

During the depth of the depression in 1932, corn averaged 29 bushels an acre in Pope County and 32 bushels in the 12 southeastern Illinois counties; the price was 30 cents a bushel. Beans averaged 12.4 bushels and sold for 48 cents. Wheat averaged 12.7 bushels an acre and sold for 44 cents. Hay made less than a ton an acre and brought $3.90. Cattle were valued at $26 each and a hog at $6.40. Stock sheep were valued at $3.80. That's the way it was on the farm in Southern Illinois in 1932.

A Proposal for Pasture Investigations

Citizens of Southern Illinois in the late 1920's had urged the University to establish an agricultural experiment station in Southern Illinois. In response, Dean H. W. Mumford directed H. P. Rusk, head of the Animal Husbandry Department and later dean of the College of Agriculture, to investigate and locate an area for an experiment station. However, funds for land purchase and development were not available at that time.

In the depression years of the 30's the federal government undertook massive land-acquisition programs designed to remove marginal and submarginal land from agricultural production. Though the production from these lands did not provide adequate family incomes, it did contribute to agricultural surpluses. Furthermore, the development of the federally purchased lands was calculated to provide relief employment. Nationally 20 percent of the working population were unemployed.

When the federal land-acquisition program unfolded, Rusk was ready; he had done his job well. Rusk had made several study trips into Southern Illinois and had formulated plans for the development of an experiment station. Seeing an opportunity for assistance from the federal programs, he wrote Henry Wallace on August 22, 1933, as follows:

To the Honorable Henry A. Wallace
Secretary of Agriculture
U.S. Department of Agriculture
Washington, D.C.

Dear Mr. Wallace:

At the request of Director H. W. Mumford, I am submitting herewith a proposal for pasture investigations to be carried out jointly by the University of Illinois and the United States Department of Agriculture.

There are large areas of marginal and sub-marginal land in southern Illinois which have presented many perplexing problems ever since this territory was settled. At the present time options are being secured for the purchase of some 300,000 acres of definitely sub-marginal land in this area with the view of establishing a national forest reservation. Adjoining this proposed national forest reservation are large areas of tax-delinquent, marginal land on which the inhabitants in normal times were able to eke out a bare existence. These lands are badly depleted in fertility, and erosion has become a serious problem. In addition to these residual upland soils there are scattered through this area many thousand acres of marsh lands along the Cache River and its tributaries.

A careful study of the agricultural problems of this territory leads the committee instructed by Dean Mumford to make a study of this situation, to believe that probably the one most promising research and demonstration project that could be carried on in that district would be a pasture project for cattle and sheep production. We believe that a tract of 2,000 to 2,500 acres could be secured that would be representative of the hilly, upland and swamp areas of southern Illinois; and that the pasture problems presented in this area would be representative of the pasture problems in large areas of southern Ohio, southern Illinois, western Kentucky, southern Missouri, northern Arkansas, and possibly portions of Tennessee. So far as I know, there is no comprehensive pasture project such as this will be anywhere in the southern Corn Belt, and it is our belief that this is one of the most urgent needs for the whole area.

As a tentative outline of such a project I submit the attached. Research workers at the University of Illinois have long recognized the importance of some such project as this. Individual farmers and two Experiment Station advisory committees composed of practical farmers have made recommendations for pasture studies in southern Illinois. Up to date this institution has not been able to find the funds to establish such a project. We believe that part of the $3,300,000,000 provided for public work and for emergency conservation projects might be used legitimately and profitably for fencing, clearing, terracing, seeding and possibly other labor-consuming operations in establishing a project of this sort. These funds if available for this purpose might best be made available through the Bureau of Animal Industry, United States Department of Agriculture.

The plan, of course, is only tentative and should receive careful scrutiny by members of the Bureau of Animal Industry in particular and by members of the Bureau of Plant Industry who are interested in pasture studies.

Detailed soil surveys have been made of Massac, Johnson, Pulaski and Union counties, but the printed map is available for only one of these counties. I am enclosing herewith a copy of Soil Report No. 30 in which you will find a soil map of Johnson county. The southwestern corner of Union county, the northwestern corner of Massac county, and a large part of Pulaski county are all similar to the southwestern corner of Johnson county. A copy of the detailed survey of the territory included in the general region suggested as the most desirable location can be made and forwarded to you if you desire such information.

No attempt has been made to secure options on definite tracts but we have information to the effect that land is priced in this territory from two dollars to twenty dollars per acre, depending upon distance from town, availability to roads, and improvement. We feel that desirable acreage could be secured somewhere in this district at a very reasonable cost.

Yours very truly,

H. P. Rusk, Head
Animal Husbandry Department

cc E. W. Sheets, H. W. Mumford

PROJECT OUTLINE

Subject: Development and Management of Pastures in the Southern Corn Belt with Special Reference to Beef Cattle and Sheep Production.

Objects: 1) To develop profitable methods of producing livestock (cattle, sheep, and possibly horses) on lands sub-marginal for cultivation in the southern Corn Belt.

2) To determine best combinations of grasses for cattle and sheep pasture on various soil types of the southern Corn Belt and to determine the most effective methods of establishing and of maintaining and managing such pastures.

3) To reduce soil erosion and conserve soil fertility on such lands.

4) To effect flood control through reduced run-off on such lands.

5) To take out of cultivation lands which are not adapted to such purposes but, under present conditions, help to swell the national surplus of harvested crops.

Location: The most desirable location from the standpoint of variety of representative upland soil types in combination with bottom and swamp areas, would be southeastern Union, northwestern Massac, southwestern Johnson and northeastern Pulaski counties.

Procedure: 1) Not less than 1,800 acres of land, the greater part of which is typical of the tax-delinquent, cultivated uplands of the southern Corn Belt will be purchased or leased. The tract selected may include as much as 25% of wooded land and should also include some swamp lands along the Cache River or its tributaries.

2) Approximately 100 acres will be abandoned to grow up in forest. On this area instruments will be installed, samples taken, and observations made to determine the changes which take place in the soil, vegetation, and run-off.

3) A suitable area will be set aside for reforestation under most improved methods.

4) A suitable area, or possibly several small areas, representing different soil types will be set aside for agronomic studies of grass culture. (Some of these areas might be provided by setting off, either with hurdles or permanent fences, small areas in regular pastures.)

5) There should be enough tillable land to produce 150 to 200 tons of silage in rotations adapted to the area. A trench silo will be used. A suitable portion of this area probably should be terraced and used as a practical study and demonstration of agricultural possibilities without livestock.

6) The remainder of the land will be used for pasture studies in connection with the maintenance of a beef cattle breeding herd, and a flock of sheep of such size that parasites will not be a serious problem.

7) The improvements for grazing would consist of

(a) fencing into suitable areas for grazing studies of various promising pasture grasses and mixtures

(b) level-terracing where topography indicates

(c) clearing brush and trees from portions of the area, clearing all trees large enough to provide shade from ditch banks and stream banks and thus avoid loss of droppings

(d) improving drainage where conditions appear to warrant cost

(e) stopping gullies where possible and practical

(f) seeding permanent pasture mixtures and applying fertilizers such as lime and/or phosphate to certain experimental areas

8) Cows will be bred for April and May calves. Hand breeding will be practiced when conditions permit and all cows not breeding will be sold for beef.

Calves will be creep-fed for about two months before weaning, and shipped by rail or truck to Urbana for finishing to meet market requirements.

Ewes will be bred to lamb before the grazing season opens, and the lambs will probably be marketed off grass.

Costs: A. Lands will be furnished by the State, unless suitable area can be secured in the proposed forest reservation or purchased in connection with the proposed forest reservation.

B. Livestock and temporary improvements, terracing, clearing, draining, seeding, fencing, et cetera, will be furnished by the United States Department of Agriculture.

C. Operating personnel and labor will be furnished jointly by the University of Illinois and the United States Department of Agriculture, particularly the Bureaus of Animal and Plant Industry.

D. As much of this operation will consist of practical demonstrations, these farms should be largely self-supporting after pastures, herds, and flocks have been established. The proceeds from the sale of livestock and other products will go into a revolving fund for operation. This fund will be carried separately on the books of the University auditor and accounts shall be available for the inspection of cooperating agencies at all times.

Application: The results shall be applicable to large areas in southern Ohio, Indiana, Missouri, northern Arkansas, and western Kentucky and Tennessee.

Rusk's proposal was accepted on a much grander scale than he had envisioned. He had asked for "not less than 1,800 acres"; Washington officials proposed 16,000 acres for the Illinois project. However, the site selected was not that designated by Rusk, but a similar one a number of miles to the northeast.

The first land option by the government was made on November 13, 1934. It was for 46.09 acres, valued at $329.36 plus $12 for improvements. Over the next three to four years, 5,000 acres — not the proposed 16,000 — were purchased for approximately $15 an acre.

The acquisition and development of lands for agricultural demonstration projects was the responsibility of the Land Policy Section of the Agricultural Adjustment Administration. This responsibility was transferred to the Resettlement Administration on June 1, 1935, and land purchases and development of the project at Dixon Springs continued.

The primary function of the Resettlement Administration was to find new homes or farms for people displaced by the government land-acquisition programs such as the one at Dixon Springs. Approximately 1,300 acres around Robbs and extending eastward to Glendale were optioned and intricately planned for resettlement use. The area lay north and west of the main body of land being developed as the demonstration project. Considerable detailed mapping and programs of operation were developed and written. A summary of this plan follows to provide the reader an insight into government thinking and agricultural conditions in the mid-1930's. (Approximately 152 resettlement projects such as this were eventually occupied, nationwide, by 10,000 families.)

Resettlement plots of one-half to six acres were mapped to radiate spoke-like from the Town Plan at Robbs. The Town Plan included communal grazing lands, picnic areas, recreation areas, a fountain and pool, a school, a community building, and an area plotted and labeled "relief cases."

The resettlement land away from the town area was mapped for three types of farms — small fruits and vegetables, poultry, and livestock and dairy — to vary in size from 5 to 45 acres. Approximately 110 farms, under the direction of a Farm Planning Office and an Agricultural Supervisor, were to be included in the resettlement area.

Farm planners worked out the soil management, crop rotations, building requirements, landscaping recommendations, size of poultry flocks, rotation plans for poultry yards, income and expense estimates, and even the kinds and varieties of vegetables to be grown in the home gardens. The program included provisions for the Farm Planning

Road-building crews in 1935 worked on the Circle Drive to the proposed model resettlement community near Robbs. The community was never built but traces of this road remain today.

Office to take steps necessary to insure that building, land management, marketing, and other details of the resettlement plans were adhered to by individual owners.

The plan suggested that resettlement farmers all keep the same breeds of poultry and milk cows to maintain uniformity for more efficient communal marketing and for the sharing of breeding stock; cooperative bull rings, spray rings, and communal pastures were advised.

The plan suggested that machinery and work stock be owned jointly by two or more farmers. From the plan: "It is rather questionable if each man can afford to own and keep a team on even 20-acre farms. Certainly he cannot if he operates only 10 acres. In this case we suggest that each operator own one good horse and have a mutual agreement that two or more arrange to loan their animals to each other when a team is needed."

Several community projects for the resettlement area were suggested. They included a fruit and vegetable grading and packing shed, cooperative marketing, spray ring, community pastures, hatchery, limestone quarry, canning factory, community seed production, and community meetings. The plan discussed the advantages of the community projects and detailed how each would operate.

When the resettlement project was abandoned in 1936 as unfeasible, the University was asked to use the land already purchased. This it did to keep the land from lying idle and from further degradation. These lands eventually became a part of the Dixon Springs Experiment Station.

How It Was Then

A survey of farm families in the Dixon Springs Pasture and Erosion Control Demonstration Project area in 1934 revealed that 138 families had an average annual gross income of only $277. That's not much money to live on. But many people the nation over did not have much money to live on in 1934.

Francis Kittinger, retired extension adviser, worked in the area for several years at sodding and healing gullies, liming, and building roads with the Civilian Conservation Corps. He tells what living was like at Dixon Springs in the 1930's. "One day on the job, another fellow and I got a truck stuck while getting a load of gravel out of a creek bed. A man came down with his team and pulled us out. It was after dinnertime and he said, 'Dinner's ready; you just come on up and eat dinner

with us.' Now they were making a very poor living, but they were setting a mighty good table — good old hot biscuits, cornbread, beans and 'taters, and pork sausage."

"Later, when we got ready to build a bridge across the creek, the farmer and his son brought two teams of horses and scrapers down to help us make the fill and build the bridge. We paid them $3 a day for a team and a man — a ten-hour day. But it was the most money they had had in their pockets in a long time, and they worked about a month."

Earl Lutz, Gallatin County extension adviser, was an agricultural teacher in the area during the 1930's. Lutz said, "About social conditions, I think that the people enjoyed themselves more than they do now. As the ag teacher, I had to go visit farmers, and if you were anywhere near at noontime, you just didn't get away without eating with them. They were very, very sociable, but they were very poor. The farm income was low. But still they enjoyed everything they had; I think even more then than they do now."

Retired extension leader Harold Gordon, who at one time worked at Dixon Springs, said, "In 1934 corn on the Dixon Springs Project lands would make 10 bushels an acre if farmers gathered all the nubbins. When the land first opened up and before erosion and low soil fertility took its toll, wheat would make 40 bushels an acre. The land originally had some of the finest stands of hardwood timber. But after clearing and hard cropping, the land was so poor and eroded that anything you did to it would help."

Before the days of the Rural Electrification Administration, A. L. Robbs, owner of the town of Robbs, operated a power generator to light the town and the Dixon Springs Project area. Wallace Anderson, now an employee of the Dixon Springs Agricultural Center, tells how the power system operated.

"Mr. Robbs had a generating plant. He didn't have enough manpower to run it 24 hours a day. Actually we didn't need power 24 hours because we used it just for lights; oh, there were a few refrigerators, but I guess they quit at night too. At about 10 o'clock each night, the lights would blink a couple of times which signaled that you had a few minutes to get ready for bed or to light the oil lamp. The lights were off until 6 o'clock the next morning. From 6:00 a.m. until 10:00 p.m., we had power. This was before R. E. A. power came in about 1941."

"How did we live back in, say 1934?" Anderson said, "We tried to raise everything we needed on the farm. Of course we couldn't raise it all, but we did the biggest part of it — had a big garden, planted

Early University of Illinois staff who had an interest in the development of the Dixon Springs Station were (kneeling) John Munson, R. F. Fuelleman; (standing) R. C. Ashby, R. J. Webb, W. G. Kammlade, J. A. Embser, J. M. Lewis.

This house typified the average dwelling on the project area in 1936. It was torn down and replaced by a modern home.

popcorn, planted corn, roasting ears, and this type of thing, and raised pumpkins and just about anything that was edible, and we ate it. Of course back then everybody had a flock of chickens. We had cows, we had chickens, we had sheep.

"But we did a lot of trading. I mean we would take off cream and eggs, go to the store, and trade for what we needed — the barter system. Saturday was a big day for farmers to go to Robbs and take their cream and eggs — whatever they might have to sell. If we had any money, it was worth more than it is now. Five bucks would buy all the groceries you could carry home.

"The hogs and calves were butchered, and in a way that you hoped they would keep. At hog butchering time it was get out and freeze trying to get a fire going; then get the water hot and scald your hands trying to scald the hog; pull them out of the water and freeze your hands again. We rendered our own lard, made our own lye soap."

Bob Webb, who spent a third of a century as head of the Dixon Springs Center, starting in 1940, told how he saw conditions at Dixon Springs in the early years. "I think many things looked a lot worse to people coming from away than they did to people living here. To someone coming from Urbana and not familiar with this part of the state, things did look a lot worse than in central Illinois. Some even thought conditions were hopeless — like the man who said that we would do more good if we exchanged the money we were spending into nickels and dimes and scattered them for people to pick up. Now that was one attitude, but not a farsighted one. It's like the old story, you give a man a fish and he has a meal; you teach him how to fish and he feeds himself the rest of his life.

"We can evaluate an area by some commonplace items like housing, roads, and the way the fields look, the way they are growing up into bushes or producing things of value, and whether the fields are fenced. On this basis, I would have to say that we were on a much lower standard than central Illinois or many other places in the world. But this was obvious, because in rainy weather as you drove down the roads you were in trouble and in the mud.

"The houses for the most part were not very attractive. Many farms were abandoned. The barns generally were in poor shape. To some people this would be depressing; but people like Dean Rusk, Dr. Kammlade, Dr. Fuelleman, and Dr. Burlison, rather than being depressed, were challenged.

"These men really came to know the people who lived here and had a deep feeling that they needed someone to help them. I think the Dixon Springs Agricultural Center was developed in that spirit.

I think that was in Dean Rusk's mind all the time — to help the people who lived here."

Why Things Began to Change

The Dixon Springs Project was dedicated on October 8, 1938, more than five years after the University of Illinois College of Agriculture first presented the plan to Secretary Henry Wallace. The dedication included a forenoon tour and an afternoon of "speech making" under a tent near the Administration Building.

The official dedication program contained a map showing the route the tour would follow. The program stated, "The optional route will be used in case the main route is too dusty or too wet for safe and convenient travel." The tour included stops described as "soil fertility experiment, soil treatments for pasture grasses and legumes, turkey project, beef cattle headquarters, pond for stock water, pasture experiments in the vicinity of sheep headquarters, sheep headquarters, dam, soil conservation headquarters and run-off plots, adaptability tests of grasses and legumes to soil and climate, and pasture mixtures."

The afternoon program included talks by representatives of the U.S. Bureau of Agricultural Economics, the U.S. Forest Service, the U.S. Soil Conservation Service, a southern Illinois farmer, and finally, Dean Blair's acceptance of the responsibility "for the administration of this new and important unit of the State Agricultural Experiment Station."

Though experimental work at Dixon Springs had been launched sometime earlier, the dedication ceremony and the acceptance of responsibility by the College, under a leasing arrangement with the U.S. Forest Service, gave the project official sanction.

The work already done by the University was that prompted by the immediate and pressing problems of farmers. The 1937 Ohio River flood had caused untold misery and loss. Corn stored in farmers' cribs was one of the losses. Water-soaked and mud-laden, the corn was very hot and sprouting when Rusk decided to turn it into beef.

Damaged corn was hauled from farmers' cribs to a trench silo at Dixon Springs where it was chopped and ensiled. In the very first livestock feeding test at the station, the flood-damaged corn was fed to yearling steers. The steers gained well, making average daily gains of more than 2 pounds, nearly as good as the gains made by steers feeding on undamaged corn.

The trench silo, now 38 years old, and many more like it at Dixon Springs still serve for feed storage. The trench silo in 1937 was a new

Dean Rusk stands to the front of a group on dedication day, October 8, 1938. At left behind Rusk are C. A. Van Doren, Soil Conservation Service, and W. L. Burlison. In the dark suit at center is John Longwell, first superintendent at Dixon Springs. J. C. Spitler, former associate director of the Illinois Extension Service in Agriculture and Home Economics, stands second from right.

J. C. Spitler, registers for the dedication. H. P. Rusk is at the extreme right. Visitors to Dixon Springs often congregated on this large truck scale until the scale was removed to make office space.

The trench silo at the cattle barns has a capacity for 1,000 tons. When built in 1937, it had dirt sidewalls, which were later concreted.

By the mid-1950's productive sheep and cattle were using well-managed pastures like these at the station.

Lee Gard, agronomist with the Soil Conservation Service and later with the University of Illinois, made an impression on visiting farmers when he told them that 500 pounds of soil was lost for every bushel of corn produced on the experimental plots.

concept; it was low cost, and could be copied easily and used by farmers of the area. Bob Webb said, "Rusk found concepts like trench silos challenging, interesting, and helpful to people. That's why he built them and demonstrated their use."

Some of the very earliest work was that of the Soil Conservation Service. Lee Gard and C. A. Van Doren started tests as early as 1936 to show the value of soil treatment, pasture cover, and proper grazing management in reducing soil and water losses. They caught and measured run-off from plots cropped and managed in different ways.

When Lee Gard said that 500 pounds of soil washed away for every bushel of corn produced, it made an impression on visiting farmers. He told them that under a corn-wheat-lespedeza rotation, a common rotation, the top 6 inches of soil would be lost in 72 years and that 15,000 years would pass before the same amount of soil would wash from lands covered with pasture.

Fertilizers, according to Gard's and Van Doren's work, are the best weapons against soil erosion. Fertilizers on pastures reduced soil losses to one-third the losses from unfertilized pastures. Proper grazing management in the tests increased the forage produced and doubled animal gains.

The Soil Conservation Service studies dramatically illustrated why the cleared hill lands of southern Illinois had washed to "rock bottom" by the 1930's. Also, this work spurred farmers and the Experiment Station alike to concentrate on pasture-livestock systems of farming. So early researchers zeroed-in on growing good pastures and using them properly with productive cattle and sheep.

Experimental test areas at Dixon Springs varied from small, rod-long plots to large fields of 40, 80, and 120 acres. Anything that showed promise in small plots was tested in large fields to be managed much as farmers would have to manage them. The field tests excelled in demonstrational value. Though small plots did show statistically significant differences, and though farmers did visually evaluate the plots, it wasn't enough. Farmers were convinced when they opened a wire gap, similar to those they used at home, and walked into a big pasture being grazed by large numbers of slick-haired cattle and big ewes with their fat lambs. This inspired and motivated them.

Inspiration, more than anything, is what people needed. The early work gave them this, but Dixon Springs didn't do it alone. Bob Webb said, "We had a lot of good help. Glen Smith, Don Lee and Earl Lutz, and a lot of other good men. Harry Neville of Saline County, and a man named Bierbaum over in Union County. Some still work in extension; Ralph Broom was an adviser in the area, now he's in Bond County.

One of many groups of farmers that visited Dixon Springs, walking through good pastures "where they got inspiration through their feet."

Pasture mixtures of Ladino clover, alfalfa, lespedeza, and orchard grass regularly produce gains of 300 to 500 pounds per acre. Yearling steers graze at the rate of one per acre for 160 to 180 days.

All those people had what it takes to get people to do things. They inspired. Inspiration is probably the most important thing in any of us, and this is one thing that farmers and others in the area here have had.

"Kammlade, Burlison, and others from far-away Urbana inspired people with some of the first ten experiments. As I recall, eight or nine, maybe all ten of them involved production of grass. You can tell people how to grow grass; they can read a textbook and it will tell them. But they're not really inspired until they see it. The best way to teach people is to show them.

"We used to take almost 5,000 people over the place each year. We were walking all day. People don't walk like that anymore. We used to get them here at nine or ten o'clock in the morning. They'd stay all day. We'd walk across Experiment 10. We'd walk in one side and out the other. We walked over that grass and that's where they got inspiration, through their feet — walking instead of riding. Walking on it and seeing it. And they knew that it was being done, and we could tell them how it was being done, and they could understand our language. The inspiration motivated them to do it at home. And they did a better job than we were doing here. That's why things began to change in Southern Illinois."

Hundred-Dollar Ideas

The early choices at Dixon Springs were not many. The eroded soils would not support a grain agriculture. That was obvious. Farmers had already gone broke following that route. Pencil-thin stalks yielded 10 to 20 bushels of corn "if the farmers gathered all the nubbins."

The entire area could have been planted to trees; and certainly trees best fitted the rockier, steeper areas. But pastures and forage-using livestock appeared to offer a greater promise on most of the land.

The first pastures were redtop, timothy, and lespedeza. That's what we knew then and they grew well. However, redtop and timothy gave way as better grasses were found. By the mid and late forties, the more productive tall fescue and orchard grass moved to the fore. Today we don't see redtop, and timothy is rarely used.

Ladino clover came into prominence in the mid and late forties as one of the best legumes in pasture mixtures. In 1948, a closely managed two-acre fescue-Ladino clover pasture at Dixon Springs produced 682 pounds of animal gain per acre. That record still stands, though gains of 300 to 500 pounds per acre have been weighed often from larger pasture fields.

Excess fescue pasture forage rolled in round bales and left on the pasture makes Christmas dinner for the cow herd.

Bob Webb, Dixon Springs superintendent from 1940 to 1973, checks the record book for a cow's performance during annual cattle roundup in 1958.

Fescue greatly extended the pastures even to year-round grazing. With fescue, cow herds at Dixon Springs never come off pasture, never shelter in barns or sheds, and rarely taste grain except that in the silage they eat. The dense sod of fescue keeps the herds out of the mud and can furnish the sole winter feed if managed for that purpose.

But no matter what we learned at Dixon Springs about making thick pastures and using them well, not much was gained until the lessons got into the minds of farmers and until they used these lessons at home.

In 1940, a man came on the scene who was right for the time and right for the situation. Bob Webb became Superintendent. Webb is an optimist who enjoys challenges and people alike. People's problems are Webb's problems. His contagious enthusiasm inspired and spread hope as he taught the lessons learned at Dixon Springs.

Effective teaching demands rare talent and imagination. Squanto, an American Indian, is credited with being the first agricultural teacher in America. His imaginative method of teaching the Pilgrims how to grow corn saved them from starvation in 1620. Gathering the people in a field, he placed three fish — heads in, tails out — in spoke-like fashion and dropped the corn in the center.

Just how the fish were placed probably made little difference in how they yielded their fertilizer value to the growing corn. But the precise and unusual detail with which Squanto performed the demonstration fixed the lesson in the learners' minds. Webb has some of the same flair that Squanto exhibited, and he used this genius to fix Dixon Springs' learning in the minds of farmers.

Clarence Allbritten, Johnson County farmer, walked Webb's all-day tours, into one field and out another; he got his boots wet tramping through dew-covered clover one time and dusty in fresh seedbeds the next; he watched how cattle relished one grass and ate around another. He said, "I began farming about the same time the Dixon Springs Experiment Station started. I started with beef cattle and pastured the land just as it was. Then the station's improved pastures came into the picture. I became very interested. I watched them and tried to learn what they were doing and why it was done. I got some pretty good pastures going and I'm still in the cattle business.

"This year we had one herd of fall calves — 25 cows, 25 calves — that came from the middle of September to the middle of November, and we didn't bring them in from pasture until the first week in January to start feeding the cows silage. We had excellent pasture this fall, some of the best we've ever had. Our main herd of 60 cows, bred to calve in early February, stayed on pasture until the first calves came.

Then we brought them in and started the cows on silage, about two months on silage and the herd will go back to pasture in early April.

"The early spring pasture will be straight fescue. Legumes get going a little later. I find that you have to have lots of kinds of pastures to stretch it, you can't have it all one kind and go the year around on it.

"So," said this Johnson County farmer, "I think the greatest good that I got from Dixon Springs was the forage program; we've been in it a long while, and some of these old hills here are growing good grass. Twenty-five or thirty years ago, they looked like we had lost them. But they have good pasture on them today, and they can be maintained through the fertility and management program.

"I know this pasture-forage program is here to stay, and it can be improved. Probably we could use some new forage crops that we haven't tried before. But that's a job for Dixon Springs. Fellows like me, who are making a living with what we're doing out here, can't jump into these things without knowing something about them. To find out about these new crops, that's the work I like to see Dixon Springs do."

During the 1940's, many sheep and cattle tests were done at Dixon Springs and most of them involved the use of pastures and forage crops. These were the crops we were growing, and they had to be marketed through sheep and cattle. A steer management test showed how to best use pastures and forages to grow and finish cattle. Cattle can be finished for market on very little grain. Though this test was done 25 years ago, it is as up to date as today's newspaper and has special application in a hungry world short in both feed and food grains.

The test compared high-grain steer-finishing programs with high-roughage programs. At one extreme, calves were weaned and immediately placed on grain feed in drylot and marketed for slaughter as yearlings. At the other extreme, calves were wintered on harvested forage and winter pastures, grazed as yearlings, wintered again on harvested forage or pasture, grazed a second summer, and marketed as two-year-olds off pasture with no grain feeding. Four other management systems between the two extremes were a part of the test.

It is impossible to say that any one of the management systems was best for all farmers; but the test had something for nearly everyone. It demonstrated how farmers who produced mostly grain and little pasture might manage steers. It demonstrated how farmers growing only pastures and forages might manage steers to profitably market these crops. And it showed farmers who produced varying ratios of grains to forages how steers could best be used.

One of the steer management plans made good use of a lot of pasture and roughage and a little grain. It also capitalized on the differences that the age of cattle and the seasonableness of grasses make in efficiently finishing cattle for market. In this plan, calves wintered on silage and hay; as yearlings, they grazed spring pastures for 90 days when the pastures were most productive, and then ate grain on pasture until they were marketed in November. Each steer ate 24 bushels of corn, 267 pounds of soybean meal, 3,300 pounds of silage, and 400 pounds of hay. The steers in this management plan grazed 220 days. From birth, they made nearly 80 percent, and from weaning, 60 percent of their market weight on pasture and roughage alone.

Farmers were influenced to seed greater acreages of improved pastures and to increase their beef cow numbers. In the past 24 years, beef cow numbers on farms in the southern 24 counties of Illinois have nearly quadrupled. In 1950 there were 45,600; in 1974 there were 161,000, an increase of 256 percent. During the same period, beef cow numbers for the rest of the state doubled. The work at Dixon Springs undoubtedly played a major role in bringing about the larger increase in Southern Illinois.

Earl Lutz, who has been extension adviser in Gallatin County for 29 years, tells about some of their county tours to Dixon Springs in the late 1940's. "We had crowds of 125 to 150 farmers from our small county. We were seeing mostly pasture renovation. I remember one year we toured when tall fescue was coming in rapidly. Pastures were dried up here at home, but on this tour we saw a group of fat old beef cows on fescue. The cows and calves were looking so beautiful. This made an impression on farmers.

"Farmers changed their farming practices. Many didn't know that the changes could be traced to things learned and demonstrated at Dixon Springs. They looked across the fence at their neighbors' pastures, the pastures of those who had early applied what they learned; they saw how well it worked, and copied what they saw. That's what extension has going for it. We depend on local people, the innovators, to get a good practice going, and their example becomes very effective as a teaching tool.

"Some farmers wouldn't miss a field day or tour at Dixon Springs or anywhere else. They're the successful farmers. Others, who would profit most by attending field days, just won't go. I think the reason is that they have some time or other gone to an event like this and expected to get a million-dollar idea all at once. And they didn't get a million-dollar idea. They got only a hundred-dollar idea. That

This field, once abandoned to sprouts, was cut with a heavy disk, fertilized and limed, disked again, and then seeded to wheat and a pasture mixture to again become useful and productive. Some large sprouts had to be cleared by hand, but note how well the disk cut sprouts.

wasn't good enough, and they weren't even sure that it was a hundred-dollar idea.

"The successful farmers go the next time and get another hundred-dollar idea. They keep combining them. If they do this, sooner or later they're going to have a million-dollar idea. But it's hard to sell people on this.

"You would think that whenever we have an agronomy meeting with agronomy specialists, there would be standing room only. We don't get it. But this isn't too bad. We get the teaching done in the most effective manner, demonstration by our innovators, by the good farmers who are on the ball and take advantage of every educational meeting or tour."

The farmers who won't miss an educational meeting can and do profit greatly from the learning wherever they go, whether to Urbana, to Dixon Springs, to Indiana, to Kentucky, or wherever. But, Dixon Springs has a psychological advantage. Here's the way Forest Lewis, a Lawrence County farmer, put it, "At Dixon Springs, I compare their land with ours. I don't have the land to compare with Champaign-Urbana land. Dixon Springs land is more like ours. That's why I like to go down there. The program at Dixon Springs more or less fits our land. It's amazing what they can do at Dixon Springs. I've got some pretty hilly land, but nothing like they have. I figure that what they can do, I can do better on my land."

Dixon Springs had a beneficial effect on the agriculture in Union County. Ralph Broom, now Bond County extension adviser, taught vocational agriculture at Cobden from 1938 to 1940. He said, "I can recall loading my agricultural classes in open trucks of local feed dealers and taking them to Dixon Springs to see the legume and grass plots and the cattle and sheep on pasture. Nowhere else in southern Illinois could better grasses and better legumes be seen, side by side. So this was something to see.

"Around Cobden we were growing vegetables in the valleys on half-acre and acre plots. There wasn't too much grazing on the hills, some dairy cattle. But everyone was trying to plow further up the hill and I think the pasture and hay demonstrations at Dixon Springs for sheep and cattle helped show the way for land use in Southern Illinois.

"Later, when I became farm adviser in Johnson County, a farmer told me, 'You've got to have phosphate on this ground to grow redtop. If you can't grow redtop, you just can't grow good cattle.' To me redtop was a pretty poor choice of grass for any place, but that's what they were growing. Dixon Springs showed that we could climb on up to fescue and timothy and then on up to orchard grass. No one had

John Longwell, superintendent at Dixon Springs from 1938 to 1940, and W. L. Burlison stand in a field of sweet clover and lespedeza. "Nowhere in Southern Illinois could better grasses and legumes be seen," said a teacher who frequently brought students to the station during Longwell's years.

Two-year-old steers at Dixon Springs were full-fed grain on pasture for 90 days before going to market in November at 1,200 pounds. Following weaning, these steers fed for two winters on silage and hay and grazed for two summers. Each ate 27 bushels of corn but the steers made 93 percent of their weight solely on pasture and roughage.

really proved before that it was practical to fertilize enough to grow these better grasses to produce 500 pounds of beef gain per acre. Not one year, but for several years, these kinds of gains were taken from Ladino-fescue, Ladino-orchard grass combinations at Dixon Springs.

"Now, today as I drive down through Johnson County to Dixon Springs across the Tunnel Hill blacktop, I'm convinced that Dixon Springs contributed more to the cattle industry than to any other enterprise. Thirty to thirty-five years ago, you saw farms with a few cattle and a peach orchard bull. Since then, farms have been joined together, and the hills are covered with decent herds. You see some beautiful sites and good cattle. Thirty years ago you didn't see good cattle. A purebred herd was conspicuous in Southern Illinois. Now you see good cattle about any place you go. This has been the big change."

Though the early choices of land use at Dixon Springs were limited, the pasture-livestock demonstrations inspired farmers to improve their pastures and greatly increase livestock numbers. The farmers felt that Dixon Springs was the place to learn. It fit conditions on their farms. Dixon Springs was THE force that changed the agriculture in Southern Illinois in the decade of the forties.

Will This Field Grow Corn?

The Dixon Springs Agricultural Center trucked 17,513 bushels of its 1973 corn crop to Urbana to be used in livestock feeding tests there. What a turnabout from the "nubbin" years when H. P. Rusk in the 1933 Plan of Operations proposed that "calves produced at Dixon Springs be shipped to Urbana to be finished for market" because not enough corn grew at Dixon Springs for that purpose.

Except for bottomland corn that went into the silos, no corn was grown on the upland soils at Dixon Springs for many, many years. Bob Webb said that Rusk once posed the corn-growing question: "It was in the forties. Dean Rusk and I were walking across one of the grazing study fields. Rusk said, 'Do you think this field will grow corn?' I said, 'Maybe, but I'd hate to put it in corn.' I resisted because we had many research figures telling us what the soil losses could be, and we had the fresh, haunting memory of the soil's depleted, recent past."

Webb continued, "To have put the fields in corn then might have been the right thing to do. You know that eventually and gradually we did this, and it worked. We made 100-plus bushels and did it in a way so we didn't lose much soil."

Southern Illinois hills now support many fine cattle herds. Some say that Dixon Springs contributed more to the cattle industry than to any other enterprise by inspiring farmers to improve their pastures and to improve quality and number of cattle.

Broomsedge had invaded this pasture, prompting Dean Rusk to wonder whether the field could grow corn. After such fields were renovated with fertilizer and new seeding, corn became an important crop in the "Dixon Springs rotation."

But many years before corn was grown on them, these upland soils were fertilized well and seeded to soil-holding, soil-building grasses and legumes, and then refertilized and reseeded several times as the pastures needed renovation. The once eroded, bare soils took on a different look, and the look was better with each passing year.

Visitors to Dixon Springs walked on luxuriant, soft organic accumulations as tour leaders took them through chest-high, flowering orchard and fescue grasses. Great as the vegetative matter above ground was, even more lay under the soil surface in the abundant, fibrous fescue roots. Samplings of washed and dried fescue roots weighed a calculated 30 tons per acre.

By the mid-fifties, the Dixon Springs hill soils did safely grow corn. The fibrous network of the fescue roots and the crumbly, mellow soil that these roots had built resisted erosion. Careful contouring, plow-plant tillage, sod waterways, and sod buffer strips allowed hill soils to be cropped, not often, but safely once in six years. So pasture renovation at Dixon Springs changed to a six-year plan: a rotation of corn, small grain, and four years of hay and pasture. Cultivation for weed control was minimal; herbicides did the job.

No crop produces more feed units than corn. It more than doubles that produced by hay crops. Farmers of the area and the Dixon Springs Center were able to increase and diversify their livestock enterprises by following the new "Dixon Springs Rotation." We didn't call it that; farmers of the area named it.

The safe growing of corn in the rotation on hill lands was another piece added to a growing agricultural "package." Bits and pieces of research information accumulated over 20 years — erosion protection, fertility needs, adapted plants, mixtures of grasses and legumes, cultural practices, grazing management, livestock management, and disease control — were gradually worked into the whole "package" or system of agriculture. This growing system is what farmers saw and learned at Dixon Springs.

How much have we gained? Let's compare the average yields for Pope County farms in 1935 with the expected yields on the Center today using the "Dixon Springs Rotation." Corn, 18 bushels versus 100 bushels; wheat, 7 bushels versus 40 bushels; hay, 0.8 ton versus 4 tons plus grazing.

A farm of 240 acres following the "Dixon Springs Rotation" would have 40 acres of corn (half for grain and half for silage), 40 acres of wheat plus stubble hay or stubble grazing, and 160 acres of pasture or hay. Based on average yields and if cows ate every bite of feed produced, the average 1935 Pope County farm of 240 acres would have

Sheep make excellent test animals. They are more easily handled than cattle and cost less. Here, researchers trace radioactive materials in the sheep's body. Radioactive-marked ingredients were fed in a study of internal parasites.

A study started in the 1940's showed that sheep and cattle grazing together used a pasture more completely and efficiently than either class grazing alone.

supported 39 beef cows and sold about 10,000 pounds of weaned calves. The same rotation on 240 acres of 1975 Dixon Springs land would support 100 beef cows and grow the steers and heifers to slaughter weights and grades for a total sale of 90,000 pounds of finished cattle.

The differences between the 1935 and the 1975 farms are: worn-out soils and revitalized soils; no fertilizer used and fertilizer used; low-producing forage species and high-producing forage species; no silage and silage; 10,000 pounds of unfinished calves and 90,000 pounds of finished cattle. The area has changed greatly from 1935 when cows were "reaching for tree leaves."

Myth Shattered

Sheep research has always been an important part of the work at Dixon Springs. Sheep suited the land-reclamation phase of the station's development. No class of livestock surpasses healthy sheep in the ability to thrive on forages and pastures. They need little grain and can use pastures and forages for 75 to 100 percent of their feed.

Sheep make excellent ruminant test animals. Their performance on pastures and the way they use forages as well as grains may be substituted for and assumed to be similar to the performance and use that beef cattle make of these feeds. Sheep fit small-plot grazing studies better than cattle; they are more easily handled and weighed; they are easily adjusted in stocking rates to more nearly satisfy the grazing intentions of the investigator and to fit changing pasture conditions; larger numbers may be used to give test results greater validity; and sheep cost less than cattle.

The highest animal gains attained on Dixon Springs pasture tests were not made by grazing sheep; they were not made by cattle. The highest gains were made by sheep and cattle grazing together or by one grazing after the other. They supplement one another and more completely use a pasture.

Thus some visitors to Dixon Springs have one of their favorite myths shattered. The myth, reinforced by the range-war novels, denies that sheep and cattle will graze together, much less perform well together. Yet cattlemen and sheepmen in the Midwest and East could profitably mix the two classes on pasture. Cow-calf producers could graze at least one mature ewe with each cow and not need to increase pasture acreage.

Ewes and lambs housed together in drylot during the day were separated each night. The ewes went to pasture, the lambs back to drylot and feed. Because ewes and lambs were never allowed to graze together, internal parasites did not become a problem in the lambs.

Early-weaned lambs demand greater attention to nutrition. At Dixon Springs day-old lambs were successfully weaned and taught to nurse at a "milk-bar" (milk replacer) as this lamb is doing.

However, sheep suffer greatly from the ravages of internal parasites. As pasture quality and carrying capacity increased at Dixon Springs, and as pastures were stocked with larger and larger numbers of sheep, internal parasites became an increasing hazard. No longer would usual grazing management or worming treatments solve the problem.

Traditionally and for eons ewes and lambs grazed together. As the lambs fattened on the pastures or ranges, they were sold for slaughter. Internal parasites under range-type management never became a great problem. Once a range area was grazed, sheep moved on, never again that year to graze where they had grazed before, and so ewes and lambs did not consume infective larvae on the grass. But at Dixon Springs, the high-producing pastures recovered rapidly and were grazed and regrazed with large numbers of sheep each year. Pastures became heavily seeded with worm eggs in fecal material. Humid weather favored rapid hatching of the eggs. Infective larvae clung to the moist forage, ready to be eaten and to continue their destructive life cycles in the stomachs of the sheep. Something had to be done.

In the late 1950's, Jack Lewis, animal scientist at Dixon Springs, made drastic changes in the sheep management program. Normal weaning, after ewes and lambs had grazed together, usually occurred at 120 days of age or when the lambs were marketed at 90 to 100 pounds. Lewis changed this. He weaned 55-day-old lambs, weighing 45 pounds, before the pasture season.

Some of the weaned lambs went to pasture and were fed on pasture; some were confined to drylot and fed. All lambs had been creep-fed and were accustomed to eating grain before weaning.

Lambs not weaned in the test were handled in two ways. Some went to pasture with the ewes and fed at a creep on pasture. Some lambs were confined to a barn and fed; their mothers grazed at night and were turned into the barn each day so the lambs could nurse.

Results were amazing. The early-weaned lambs did not become greatly infected with internal parasites. They thrived and gained rapidly. The confined lambs that nursed during the day in the barn performed even better. We learned that lambs can be weaned early and that internal parasites can be controlled in the lambs by never allowing ewes and lambs to graze together.

However, early-weaned lambs grown in confinement require exacting nutritional attention. F. C. Hinds, University of Illinois animal scientist, while resident at Dixon Springs from 1959 to 1964, researched the nutrition in young lambs. He found that they require rations higher in protein than previously thought to be adequate. L. A. Arehart, animal scientist at Dixon Springs from 1965 to 1970, did

The large sheep barn at Dixon Springs has slotted floors above a deep manure pit. It has a capacity of 1,000 lambs.

The large sheep barn, the first of its kind, has been studied by many visitors and copied widely as a labor-saving barn suited for intensive sheep-production systems.

management studies with early-weaned lambs on slotted floors to determine space requirements and the types of floors most suitable.

The studies of Lewis, Hinds, and Arehart gave impetus to today's intensified sheep production programs — programs of early weaning, confinement rearing, use of slotted-floor barns, and stepped-up lambing schedules that make the ewes produce more lamb crops. These intensified sheep management programs tested at Dixon Springs have received nationwide attention.

Tom Wickersham, a sheep specialist at Iowa State University, said, "For fifteen years I have heard knowledgeable sheepmen refer to Dixon Springs always with an indication of the excellence and breadth of the sheep research. For answers to practical problems, I find help in the Dixon Springs research reports. Some good examples include work on parasites, space requirements for lambs in confinement, types of floors for sheep, early weaning, and nutrition of the early-weaned lamb. Over the years the Dixon Springs Center has been of much benefit to farmers all across the farm flock states."

A. L. Pope, chairman of the Department of Meat and Animal Science, University of Wisconsin, wrote, "There are few facilities similar to Dixon Springs in the United States, and I know of none east of the Missouri River. The scope of Dixon Springs in land, buildings, equipment, and personnel makes it possible to do research with variety and volume that other states in the eastern half of the United States cannot do. It follows that we lean heavily on research results from Dixon Springs to fill the rather large knowledge gaps in certain areas. More research on the facilities and management needed to raise lambs in confinement has been done at Dixon Springs than totally in the rest of the United States. These results are being applied as rapidly in other countries, such as Spain and the Middle East, as they are here. Perhaps most significant of all is the 'farm laboratory' aspect of Dixon Springs where results can be of immediate help to the farmers."

Purdue University animal scientist J. B. Outhouse wrote, "The Dixon Springs slotted-floor barn has been a model for construction of similar units both for research and for commercial production in many areas of the country. Because of the number of animals involved and the excellent facilities, Dixon Springs has been able to conduct more intensive research with sheep than can be done at most other state experiment stations and universities."

Dwight Holaway, coordinator of a vocational technical institute in Minnesota, wrote, "We have used metal slotted floors for three years. Under no conditions would we now consider lambing on anything other than slotted floors. We believe that we can pay for the floors in

one year by the savings in straw for bedding, that alone. Also, we save labor; our lambing sheds stay drier with less ammonia odor. Confinement on slotted floors improves lamb management, and Illinois should be congratulated on introducing the practice to us in the country."

Holaway continued, "In past years most of the sheep in this area were lambed during the months of February and March. As a general practice the ewes and lambs were turned to grass. The lambs were weaned in the fall. Now, member-producers in our lamb and wool production program wouldn't think of turning their lambs to grass. Instead, they save a bit of money by cutting feed on the mother ewes when the lambs are about six weeks old, and they wean at eight weeks. The weaned lambs go on a high-concentrate feed and are marketed at about 125 days of age. Thanks to Dixon Springs for researching these areas of sheep management and for sharing the information."

A Nebraska sheep producer, according to *Feedlot Management* magazine, built a 160- by 40-foot slotted-floor lamb-feeding barn based on the design of the slotted-floor barn at Dixon Springs. The slotted floors have a capacity for 1,000 lambs, 4 square feet per lamb. Lambs on this Nebraska farm are weaned at 45 to 55 days of age and then grown to market weights and grades on the slotted floors. The sheep feeding and management systems used on this farm conform closely to research pioneered at Dixon Springs.

Larry Roberts, a western Kentucky farmer on the Kentucky-Tennessee border, has raised sheep all his life. Up until four or five years ago, he had used conventional pasture systems for rearing his lambs. Then he got into trouble, particularly with internal parasites. He was on the verge of getting out of the sheep business when he came to Dixon Springs and learned the new management system of early weaning and confinement rearing.

Roberts adopted the system against the advice of those who said, "It will never work; all the lambs will die." But the system worked for Roberts. The lambs did not die.

Roberts brings his 250 ewes and their lambs into the shed until the lambs reach two months of age. "Then," he says, "I keep the ewes as far away from the barn as possible and finish the lambs in drylot. I'd be out of the sheep business now had it not been for the help from Dixon Springs. And I didn't want to get out of the business. Lamb prices are fairly stable from year to year with no great ups and downs. In 1974, when few livestock men made money, I made money on sheep. Lambs sold for 48 to 49 cents."

Though sheep may not be a common class of livestock on most farms today, their numbers have increased to sizeable operations on

some farms. The sheep management practices that have evolved at Dixon Springs have greatly helped these producers.

Some say that the future of sheep as a major meat animal is brighter than that of any other. They say this because sheep have the capability of producing acceptable meat with no concentrate feeding at all. If need be, sheep can use roughages solely and thus not compete with people for food grain. Sheep management learned at Dixon Springs can make a continuing contribution to what may well be an enterprise of increasing importance.

So Much in So Little Time

Perched high above much of the Dixon Springs land lies a tract from which hundreds of acres of pastures fall sharply and then unfold in a gentle rise until they meet the sky several miles southward. From this tract, the pastoral vista avows the atoning grace wrought by years of careful testing of agricultural science. Where better could research destined to have an extraordinary impact be initiated? It was here that the first zero-till (also called no-till) corn was grown. It was planted May 9, 1962, by George McKibben, Dixon Springs agronomist.

It was an unpromising beginning. The planter, designed for conventional seedbeds, didn't work well in the fescue sod; many seeds were left uncovered. Plant populations in the zero-till plots averaged only 11,350 plants per acre, 3,000 less than the populations in the prepared seedbeds. But the grass and weed control was good. A herbicide had been sprayed on the closely grazed fescue sod the day after cattle had been removed on March 28, about six weeks before planting.

The four half-acre, zero-till plots averaged yields of 88 bushels an acre. One of the four made 105 bushels and the lowest yielding plot made 78. The conventionally tilled plots averaged 110 bushels; the plow-plant plots, 91.

All through the 1962 growing season, the killed-sod (zero-till) plots held more moisture than the others. The difference was especially marked at the end of a two-week drouth which came during the last part of the growing season. Available moisture in the top 12 inches of soil was 31 percent for the killed-sod plots, 16 percent for the conventional plots, and 15 percent for the plow-plant plots.

A fortunate accident happened that first year. One part of a plot, outside the sampling area, was missed when the plots were first sprayed with a herbicide. Grass on the missed spot continued to grow until it was treated with a herbicide three weeks later. Corn on this spot grew

Planting the first zero-till corn plots at Dixon Springs in 1962 required added weight to get the planter, designed for conventional seedbeds, into the sod.

Larry Roberts, a Kentucky farmer, shows his early-weaned lambs growing in drylot confinement. Roberts credits Jack Lewis of Dixon Springs with getting him out of serious trouble with internal parasites in lambs grown in the old conventional way on pasture.

taller and greener, and yielded better. The greater mulch held more moisture. (In later years and as more weedkillers became available, sods were not sprayed until after the corn was planted.)

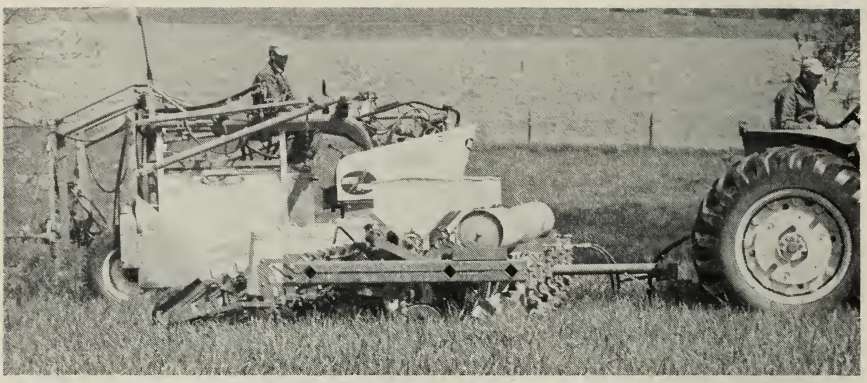
Spurred by the promise of the first tests, George McKibben worked hard at testing zero-till corn production statewide; he established and tended plots of zero-till corn at DeKalb, Urbana, Carlinville, Brownstown, and Dixon Springs. He built a model no-till planter that did the job. He tested hundreds of chemical weedkiller treatments. He coaxed and badgered machinery and chemical companies alike to produce good no-till planters and to market and label chemicals that farmers could buy and use to produce consistently high-yielding zero-till corn, sorghums, and soybeans.

Harry Young, a farmer in Christian County, Kentucky, first took the zero-till idea and made it work in a practical farm situation. Mr. J. R. Davie, retired Kentucky county agent, tells this story best.

"I started work as county agricultural agent at Bardwell, Carlisle County, Kentucky, in March, 1946, and the following year made my first trip, with a group of farmers, to the Dixon Springs Agricultural Center. During the next several years I believe we made three more tours to Dixon Springs. The Carlisle County farmers at that time were mainly interested in beef cattle and forage programs. They were always highly impressed with the practical ways in which you did things at Dixon Springs.

"After I moved to Christian County, a group of local farmers was contacted for a tour to Dixon Springs. At Dixon Springs the usual tour of crops and livestock programs was made. One of the things that attracted the attention of the group and Harry Young in particular was the no-till corn plots. [These were the first zero-till plots at Dixon Springs.] That fall Mr. Young wrote Bob Webb for the yield results on the no-till corn plots. He told me, early the next year, that he planned to plant some no-till corn. An old planter was converted and eight-tenths of an acre of land that had been cropped in barley and lespedeza the year before was planted to no-till corn.

"It was a rather dry year and to everyone's surprise the no-till plots had a better yield than the conventional corn in the same field. We held a meeting at the field in August for local farmers to look and compare. The no-till plots on the farm were held to rather small acreages for the next few years, but a field meeting was held at the plots each year. Also during the next few years at least three trips were made to Dixon Springs to check on the no-till work there. This included methods of adapting planters to no-till planting as well as herbicide combinations and any other pertinent information.



As commercial zero-till planters became available and as the herbicide arsenal increased, zero-till culture increased rapidly.

The Dixon Springs planter worked well in untilled seedbeds, even in very tall grass, and has been used statewide in zero-till research plots.

This zero-till planter was designed and built in the farm shop at Dixon Springs. Donnie Morris, farm mechanic, was the chief builder.

"In 1966 we had approximately twenty farmers doing some minimum-till and no-till corn planting with home-adapted equipment. A tour was organized for August 15 in Christian County. Bob Webb and George McKibben of the Dixon Springs Agricultural Center were our featured speakers. For the program we registered 325 people from 19 counties. At the conclusion of the program, I talked with Mr. McKibben and Mr. Webb and indicated that I would like to see some soybeans and some grain sorghum plots, no-till after barley and wheat. In fact two farmers had agreed to do some no-till beans in 1966, but the one piece of planting equipment the two were using had some broken parts so they did not get their plots out. In 1967, the year following our first field day here with McKibben and Webb, Dixon Springs had no-till beans and grain sorghum plots after wheat. They gained some good information which they shared with us.

"The first reliable commercial no-till planter came on the market in 1967. This was the Allis-Chalmers brand. Our local dealer sold the complete allocation of these planters received by the Memphis regional branch. No other area in the region had a demand for no-till planters. The year 1967 saw more than 300 acres of no-till soybeans following barley and wheat in the county. Six different herbicides or combinations were tested and the 20- and 40-inch row widths were used. Later in the year, Harry Young, Henry Lilly, and I went to Dixon Springs to compare their results and ours. As a result, a new cropping system was developed as farmers in 1968 planted over 2,000 acres of double-crop no-till soybeans.

"In 1967 we had our second big field day. By then several chemical companies had become interested along with Allis-Chalmers. These companies sponsored the meal, buses for the tour, etc. Again McKibben and Webb were two of our speakers. On the 1967 field day there were 725 people registered from 21 states. No-till corn was the big attraction for the 1967 field day with about 3,000 acres in the county. However, the tour group got to observe the no-till beans also.

"The last of our big field days was in 1969 with McKibben and Webb again part of the program. By that time we had pretty well developed the rotation of corn followed by barley or wheat, then soybeans double-cropped after the small grain. Under this system a field would produce three crops in two years with the only tillage being to disk the corn ground for the wheat or barley crop.

"By 1971 we were planting over 27,000 acres of soybeans in the county with half of these being no-till double-crop. Also no-till corn acreage exceeded 20,000 acres. The double-crop beans after barley

George McKibben examines zero-till soybeans planted in wheat stubble after the wheat had yielded well. Zero-till double-cropped soybeans have increased rapidly in the southern Corn Belt.

were yielding as well as, and often better than, conventional beans planted earlier. The straw mulch conserved moisture.

"The 1971 soybean crop averaged 35 bushels per acre countywide and returned the farmers $2,750,000. Five years earlier, in 1966, there were 2,100 acres of soybeans in the county yielding 26 bushels per acre and returning farmers $150,000.

"By 1974 the soybean acreage in the county had increased to 80,000 acres. Almost half of this was no-till after small grain. About half of our 45,000 acres of corn annually is planted no-till. Most of this is after the previous year's soybean crop. The one problem that prevents more no-till planting of corn and soybeans is johnsongrass. Chemicals that do a reasonably good job of johnsongrass rootstock control must be incorporated with tillage equipment.

"Incidentally, the 1974 soybean crop of 80,000 acres averaged 27.5 bushels per acre and sold at an average price of $6.50 per bushel for a gross return of over $14,000,000. Quite an improvement over the $150,000 gross eight years earlier.

"The people at Dixon Springs were the source of both information and inspiration to make this rapid adjustment in our crop production practices.

"The field trip when we saw the beginning of no-till corn at Dixon Springs furnished the first bit of both information and inspiration; personal contacts over the next few years reinforced this. Mr. McKibben and Mr. Webb were our featured speakers at noon in 1966. They helped instill enough confidence in no-tillage among farmers that by 1967 our local farmers were ready to buy all the no-till planters on the market. McKibben and Webb attended our field days for four consecutive years and were an excellent source of information and by their confident manner encouraged the rapid adoption and expansion of a new crop-production concept.

"The information gained and the rapid adoption of the no-tillage concept throughout a large portion of the southeast and midwest have resulted in expanded food production and added countless millions in farm income. I can't think of another comparable project where so much was accomplished in such a short time unless it was the introduction of hybrid seed corn."

One can never safely predict how the seed of an idea may germinate and spread to greatly change an important segment of agriculture. In 1962 we showed the Kentucky visitors the zero-till corn plots as an interesting part of a total pasture and livestock tour; Mr. Young and Mr. Davie saw the potential for zero-till crop production.

At that early date, we did not have a planter that would do a good

Agronomy foreman Victor Watson shows the heavy mulch yielded by zero-till well-fertilized corn. The mulch protects the soil after harvest.

Lee Gard points to the high soil losses with conventional tillage as compared with low losses under zero-till culture (bottom two lines).

job of covering the seed, and the weed chemical arsenal was less than adequate. But Harry Young, advised and encouraged by McKibben, made the necessary planter adaptations to make the system work. Many farmers like Young are the yeast that leaven the whole loaf. And when they succeed, the adoption of new agricultural concepts spreads rapidly.

The zero-till concept has spread in Illinois and has caused changes in the enterprises on many farms. Dan Maloney, a farmer in Gallatin County, where zero-till culture has gained many converts, said, "We have used a lot of the silage work from Dixon Springs but when zero-till came into the picture, we got rid of the cattle. Double-cropping has probably meant more to us than anything else. We grow zero-till corn — quite a bit — on the well-drained hilly land. We seed wheat following corn and then plant soybeans zero-till in the wheat stubble, three crops in two years. This year we've got 1,300 acres of wheat. I suppose if the weather is favorable, we will double-crop all of it. Last year we double-cropped 1,000 acres, wheat and soybeans."

Earl Lutz, extension adviser, said, "The Dixon Springs high point has been the promotion of zero-till. And I would say that the promotion of zero-till in soybeans, up until this time, has had a lot greater influence on the economy than zero-till in corn. But I think in the long run it will be the other way around. People are trying to grow corn not by the zero-till method on land where erosion is going to cause a lot of trouble in the future. Land-use planning is here, and if we don't try to conserve the soil, it's not going to be long before we are forced to. Zero-till is a way to conserve soils now before legislation requires it."

Lee Gard, Dixon Springs agronomist emeritus, said, "The most important single conservation consideration for the farm operator is the choice of a tillage system. Measured soil losses on 9-percent slopes at Dixon Springs were 15 times greater for conventional tillage than for zero-tillage." This was in a double-crop system with wheat.

Gard has emphasized that 80 percent of soil losses each year usually occur during one very intensive storm. A single storm can deface and profane unprotected, cultivated soils. Usually this type of storm occurs in the spring, April-May-early June, when cultivated soils are most vulnerable.

One morning after such a storm several years ago, a Massac County farmer came into the Dixon Springs offices wearing muddied boots and trousers. He wanted to see George McKibben "right now." This farmer was distressed. He had just waded through his fields and had seen the exposed white corn roots, the many freshly cut gullies, and the scoured shale and rock. He wanted to talk to McKibben immediately to learn how to grow corn by the zero-till method.

Not all requests for help are nearly as dramatic as this one. Nor does zero-till cropping appeal to all farmers primarily because of the soil-saving benefits. To many, the greatest appeal that zero-till cropping has is its time-saving factor. The farmer doesn't have to plow, which takes pressure off him in a busy, often wet spring season. With zero-tillage he can plant immediately when soils are dry enough. His crop is planted earlier for highest yields.

One farmer using the conventional tillage system complained about the frequent and successive storm fronts that passed through Southern Illinois in the spring of 1975. He said, "We had our ground plowed and ready to plant, then it rained. We disked and got the soil dried out. It rained again, several times, and each time we disked to dry the soil, it rained some more." His planting was late. With the zero-till system, he could have had his corn all planted by the time he got his plowed soil dried out from the first rain. That's the important time that zero-tillage saves.

Ralph Broom thought the Dixon Springs Agricultural Center had made the greatest contribution to Southern Illinois in its encouragement of the development of the beef industry. "But," he said, "if I hadn't known about Dixon Springs until ten years ago, the no-till work would be the trademark of Dixon Springs, because it has been so dramatic. To see no-till crops on the hills is just unbelievable. The attention that McKibben's no-till work has drawn has really been something. And then last year, McKibben produced the highest corn yield of any in the state — in Southern Illinois where 30 years ago you couldn't grow anything. George McKibben's work of course is known throughout the Midwest and has been a real contribution."

Bob Webb expands on this idea, "At Dixon Springs we didn't develop fertilizers; we didn't develop any pesticides; we didn't develop any chemicals; we didn't develop grasses or legumes or do plant breeding work. But we sure learned how to use these things, to put them together, and to show farmers how to produce feed for cattle and sheep. However, there is one area, zero tillage, in which we can pretty well take credit. We started the idea. We have gone a long way on that one. I would say that for the Midwest — I don't know how big an area — we can take nearly full credit for the influence of zero-till culture."

Eighteen bushels was the Pope County average corn yield in 1935. In 1974, a test plot of zero-till corn planted in cornstalks at Dixon Springs made 202 bushels.

Testing and Feeding Beef Cattle

The beef cows at Dixon Springs have always been on performance test. They were tested for many years before the Illinois Beef Performance Testing program began in 1955. The IBPT program has grown greatly — from one herd in 1955 to 424 herds in 1974, when weaning records on nearly 15,000 calves were processed. Illinois extension advisers supervise and assist in this cattle testing program on farms in their counties. Farmers use the records on each cow as a tool to select and cull and to measure their progress in herd improvement.

Every calf produced at Dixon Springs undergoes close scrutiny. George Cmarik, animal scientist, keeps detailed life histories on every cow, calf, and bull produced and used. His records include positive identification with tattoos at birth, sex, birth weights, unusual circumstances of birth, the dams and sires, age of dam at first calving and for each successive calving, weights and quality grades of the calves at weaning and at periods throughout their lives, and immunization and complete health records on every animal. These records contain a wealth of information that can be used to establish norms for production and health expectations. They proved to be of inestimable value to the Illinois Beef Performance Testing program.

Lee Evans, a former graduate research assistant at the University of Illinois, studied and evaluated years of records on the Dixon Springs herd. From these records he formulated correction factors to be applied to any weaned calf so that all calves could be assumed to be more or less equal in the variables that affect weaning weights. After correction factors are applied, differences between calves can be assumed to be genetic and the cows in a herd can be rated on their *true* producing ability.

Armed with these correction factors, extension people were ready to "roll" with the IBPT program knowing that the records would have real meaning for herd owners. The program is popular in Illinois. It helps both purebred and commercial producers to more rapidly improve their herds; it takes out the guess work. It allows producers to estimate with reasonable accuracy a heifer's lifetime production potential based on the first calf she weans. Herd bulls today are purchased on the basis of performance rather than on pedigree alone as was done for generations before performance testing.

The herd tests at Dixon Springs made a contribution to a rapidly improving beef industry that today more efficiently turns farm feeds into steaks, roasts, and hamburger for the nation's tables. That such an improvement has been made is reflected in gains of 3 pounds a day

Bob Webb and George Cmarik weighing cattle at Dixon Springs in the 1960's to learn the growth patterns of cattle of different ages and of different breeding. Crossbreeding work at Dixon Springs searches out breeding combinations that make cattle grow faster and more efficiently.

Every calf produced at Dixon Springs gets close attention. Oakley Robinson, Dixon Springs herdsman, shows visitors how day-old calves are chemically dehorned and tattooed for permanent identification.

per steer in the feedlot, which are as common today as gains of 2 pounds twenty years ago.

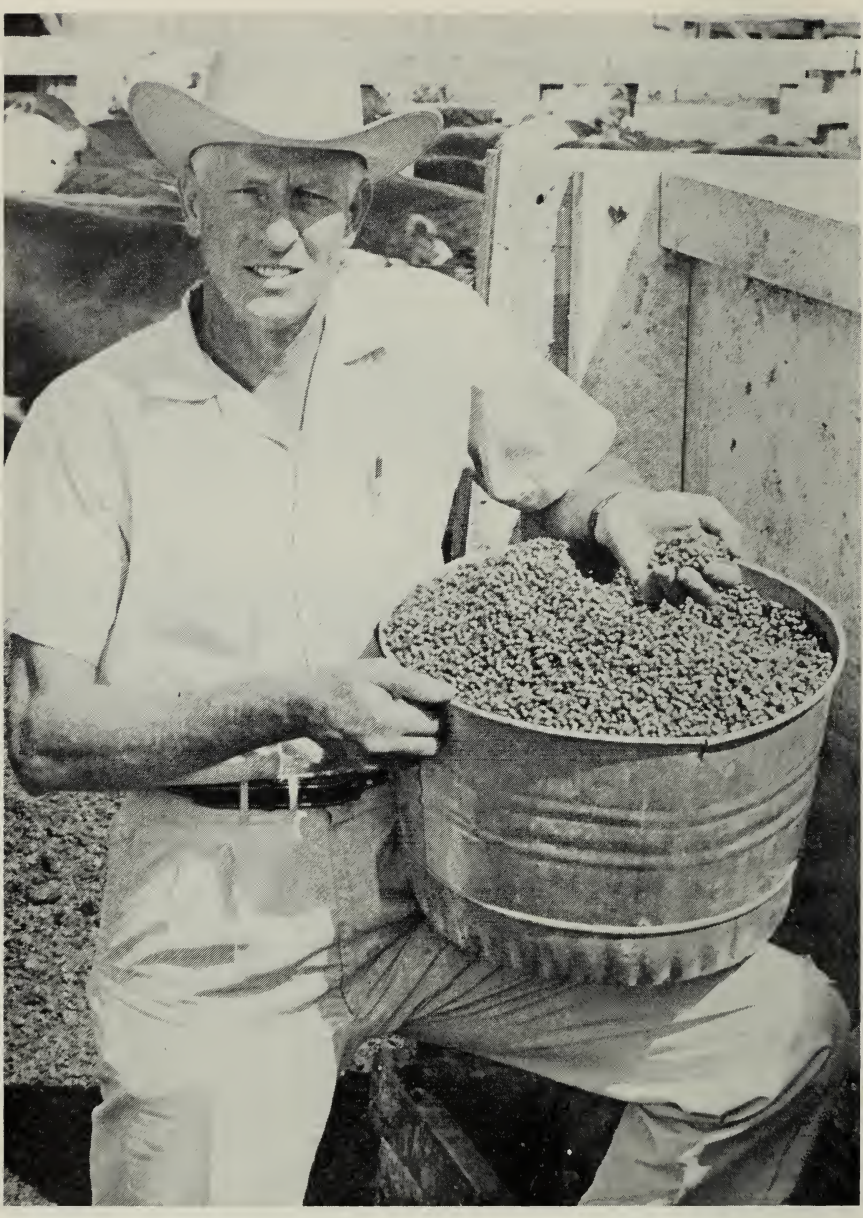
Genetic improvement of breeding stock is only part of the more efficient production of meat animals. Livestock health and improved rations contribute also. To properly compare rations experimentally, it is vitally important that test animals eat exactly the ration being tested, that they don't pick and sort the feeds offered; one mouthful must be just like the next. To accomplish the desired complete consumption, feed components are ground and thoroughly mixed. The ultimate in preparing test rations includes pelletizing the ground, mixed feeds. Pelleted feeds reduce waste and further assure uniformity; one pellet is exactly like another.

Some of the earliest pellet feeding tests were done at Dixon Springs in the early 1950's. Fattening lambs feeding on pellets gained much faster on less feed than did lambs eating the same rations in meal forms. Pellets increased daily gains by 55 percent, and 74 pounds of pelleted feeds produced as much gain as did 100 pounds of the same rations in meal form.

These results almost instantly received nationwide attention from the commercial feed industry. And, Dixon Springs had stirred a flurry of research on pellet feeding and had become the authority for the formulation of complete, pelleted rations for ruminant animals, both cattle and sheep.

George Cmarik tested pellet feeding for finishing beef cattle with results similar to those attained in the lamb feeding tests. He used increasing levels of forages in the pelleted finishing rations for steers and demonstrated amazing value for the high forage levels. Ultimately, he pelleted hay alone, no concentrate, and self-fed that to steers.

In 1955, Cmarik fed steer calves all the hay they would eat for 119 days. One group of calves ate baled hay, one group ate chopped hay, and one group ate pelleted hay. Nine pounds of pelleted hay produced a pound of steer gain. It took nearly twice as much baled or chopped hay, 17 pounds, to produce the same gain. The pelleted alfalfa-timothy produced average daily gains of 1.73 pounds, about three times the gain produced by the baled or chopped hay. By pelleting, Cmarik had essentially converted a roughage into a concentrate feed. Pelleting of roughages is an expensive process and, though not economically feasible with today's needs and pricing structure, we now know that the extra processing can be used with good results to get more meat from limited supplies of feed, if needed.



A complete balanced ration bound up in pellet form, which cattle relish and eat from a self-feeder, was developed at the station (Bob Webb, 1959).

Keeping Livestock Healthy

The total livestock-pasture program at Dixon Springs has benefitted greatly from the help given by the College of Veterinary Medicine. Without this assistance, the tremendous increase in the livestock industry of Southern Illinois most certainly would have been of more modest and of less profitable proportions.

From the first day at Dixon Springs, the College of Veterinary Medicine has helped with disease immunization programs and with recommendations for maintaining herd and flock health. Doctor M. E. Mansfield, Dixon Springs veterinarian, has constantly monitored the livestock health situation at the Center and in Southern Illinois generally. Leptospirosis once highly infected the Dixon Springs herds. Today, after the disease was researched, Mansfield follows an immunization program which has reduced the incidence of infection to very low levels.

Pests of agriculture — weeds, diseases, and insects — in a general way move from south to north, adapt to the more severe environment, and become a spreading problem to Illinois agriculture. Organisms that cause animal diseases are no exception. Through vigilant monitoring at Dixon Springs, veterinarians early detect the "exotics" in the disease realm. They have the opportunity to study these diseases and learn the control measures necessary before the diseases become major threats to the livestock industry of the state.

Mansfield developed a management system to consistently and infallibly produce lambs free from internal parasites. He placed newly born lambs and their mothers on slotted floors, steel mesh, where they remained until the lambs reached six weeks of age. Ewes were then put on pasture; the weaned lambs stayed on the floors where they grew rapidly and never ingested infective stomach worm larvae. This procedure interrupted the life cycles of the internal parasites that depend upon larval development on pastures seeded with infective fecal material from the mature flock.

A lamb free from internal parasites makes rapid and efficient gains. But more importantly, the unparasitized lamb is an excellent research tool. Such a lamb can be experimentally infected with known kinds and numbers of stomach worms to precisely evaluate the consequences of varying degrees of infection and to score the effectiveness of different control measures. A particular control measure may work well on one level of parasitism but utterly fail on a higher level.

Other important benefits accrue to the study of parasite controls. An unparasitized lamb offers opportunity to study the immune

M. E. Mansfield is drawing a blood sample as part of the College of Veterinary Medicine's constant surveillance of livestock health at Dixon Springs.

A just-born lamb and his clean, freshly shorn mother are put on a well-cleaned slotted floor to prevent the new lamb from ingesting infective stomach worm larvae.

Veterinarians check temperatures of newly-weaned calves so those showing fever may be given early treatment against respiratory diseases.

University of Illinois livestock specialists sort calves for the cooperative feeder calf sale at Dixon Springs.

Cooperative lamb and wool pools are services offered producers in the Dixon Springs area. Producers bring lambs and wool to Dixon Springs, where experts grade and lot the products to attract buyers who will pay higher prices.

At one of the annual shearing schools, Jack Lewis teaches a fledgling shearer how to shear with the least effort so that neither the sheep nor the wool is damaged.

processes in the animal body. As these processes become better understood, the principles learned could lead to ways of immunizing people against the many types of parasites that invade the human body. With this in mind, Mansfield continues his immunization studies with lambs at Dixon Springs.

Mansfield and other University of Illinois veterinarians helped local producers who sold cattle through the annual cooperative feeder calf sales at Dixon Springs. They surveyed the hundreds of calves and yearlings sold each year and learned the severity and incidence of parasites and respiratory diseases in cattle consigned to the sales. Because the cattle were identified, the consignor and purchaser of each was known. Study cattle were periodically inspected in the buyers' feedlots. Where problems occurred, both producers and buyers were advised of ways to produce and maintain healthy cattle. This assistance has done much to improve the health of cattle consigned to the Dixon Springs sales and has strengthened buyers' confidence so that bidding is brisk. Feeder cattle at the Dixon Springs sales usually command prices a cent or two above the general market.

Never a Bad Sale

Through close contact with the people, Dixon Springs staff are able to quickly identify problems and work toward solutions. Marketing, a perennial problem with farmers, can be particularly acute in some areas. Illinois lamb and wool producers, often at the mercy of traders, especially need help in marketing their small lots. The Center has cooperated with these producers to put together quality, graded products in sufficient quantities to attract competitive national buyers who can and will pay what the product is worth. The first wool pool at Dixon Springs was held in 1958. Eighteen such annual pools have been held since. Shearing schools are also conducted each year to instruct in proper techniques and care of fleeces.

The Egyptian Livestock Association sale at the Center was the first cooperative sale in the state. A quarter of a century of annual sales mark this event. Local cattle producers bring quality calves and yearlings to the sale where University of Illinois livestock specialists and extension advisers weigh, grade, and lot cattle into like and attractive packages for auction.

Prior to the first cooperative sale in 1950, local producers had learned well the Dixon Springs lessons on pasture and cattle improve-

ment. They had developed a new, quality product, but had to sell by old methods — to traders — and were not getting full value.

Ralph Broom tells how this problem was resolved. "A group of Johnson County beef producers came into my office one Saturday morning. They said, 'We've been down in Missouri and they have something going there that we need up here. They get a lot of feeder cattle from many farms together and sort them into uniform lots. The University of Missouri helps them sort, and they're bringing three to four dollars more per hundred pounds.'

"And I said, 'If you fellows are interested in organizing and promoting it, then there's no reason why we can't do that here and do it better.' About that time Bob Webb walked in. And so they went all through it again with him.

"Webb said, 'We might even do it at Dixon Springs.' Well, that put the wrapping on the package. The producers said, 'When do we get going!' "

On the first Thursday in October, 1950, 60 farmers brought 638 cattle to Dixon Springs for lotting and auction. The cattle sold for $90,701. During the last 25 years, 56,086 cattle have sold for more than $7,500,000. Consignors have numbered as high as 250, and the sale has gained in quality and reputation.

A Johnson County cattle producer, Clarence Allbritten, tells what he thinks about the Dixon Springs cooperative cattle sale. "The sale has had a tremendous influence on the cattle industry as a whole. Our markets here were haphazard. We just had to sell anywhere we could. Then we grouped our cattle and had them graded by the Cooperative Extension Service and the extension livestock specialists. We advertised, and feeder cattle people came to our sale. And then they began looking down here for feeder cattle. I know this had to have an impact on the price for feeder calves in this area.

"We had a market and we got all the cattle were worth, maybe sometimes more than they were worth. But the cooperative cattle sale helped to build the industry and it brought in IPLA (Interstate Producers Livestock Association). They picked it up and have been effective all down through the years. They've got a real good feeder cattle program going. But this sale at Dixon Springs was the granddaddy of all of them. It was the first cooperative effort ever made here to sell our product and it was highly successful.

"We have never had a bad sale — no matter how bad the market — in all the years that the Dixon Springs sale has been in operation."

Pines and Planters

Forestry appeared early in Dixon Springs history as a necessary part of proper land use.

Foresters took on the task of reclaiming lands judged to be too steep, too rocky, and too poor to be used in any way other than for trees. This patient group of researchers, using only the leavings, set about learning how to reclaim the land and obtain long-term yields of both product and information.

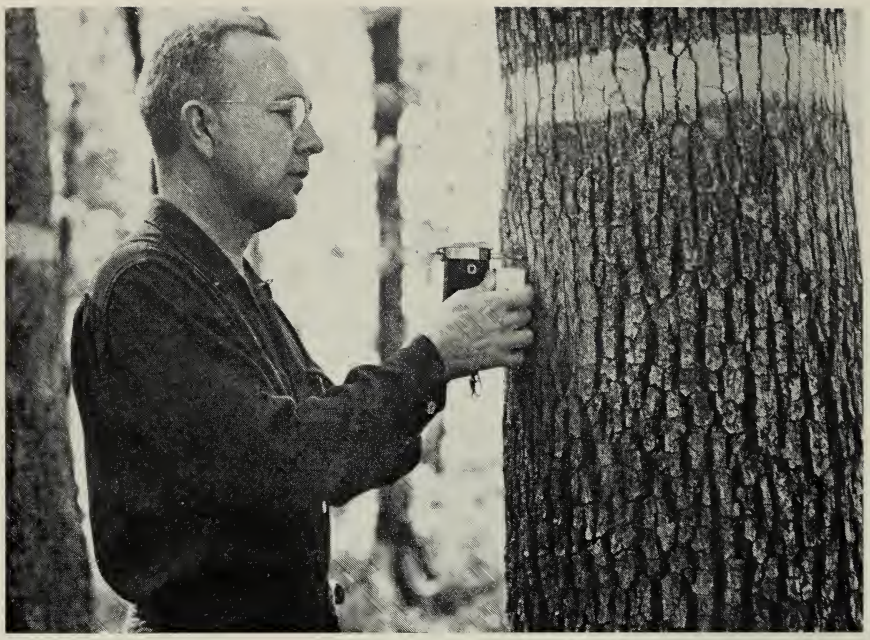
W. R. Boggess, Forestry Department head emeritus, came to Dixon Springs in 1948. He started research that will yield data for many years to come. A. R. Gilmore, Larry Burkhart, R. A. Young, and L. E. Arnold followed Boggess as resident foresters. Each added new projects and continued the basic research established by Boggess.

Today forestry research at Dixon Springs is not confined to the Center, but is widely scattered to include some studies in western Kentucky and northwestern Tennessee. Study areas are on federal, state, and private forest holdings. More than 20 research areas range from about one-half acre to nearly 50 acres and total more than 250 acres. Many of the major projects involve research that has been going on for 25 years or longer. With each passing year, they yield information of increasing value.

The results of species, spacing, and thinning studies are making a significant impact on forestry management. Forestry research at Dixon Springs has demonstrated, contrary to early thinking, that loblolly pine can be produced in Southern Illinois and that this species grows faster than shortleaf pine. This learning has changed the planting practices on the 213,000-acre Shawnee National Forest as well as on farms. Spacing studies in pines planted 25 to 30 years ago now show that spacings once thought to be too wide produce desirable forest products. This finding will save in planting labor and tree stock costs as well as in harvesting costs.

Extension forester R. E. Nelson has worked a quarter of a century in Southern Illinois with farmers, youth, schools, industry, and professional foresters in the total forestry field of planting, managing, and harvesting. He has been a dedicated coordinator and teacher of the popular, statewide youth Farm Forestry Camps.

Nelson relies heavily on the forestry research and demonstration plots at Dixon Springs as he tours and teaches the many groups with which he works. One such plot deals with farm management of hardwoods. A poorly managed, exploited hardwood stand on the Center was selected 25 years ago to serve as a demonstration of timber stand



In the late 1950's W. R. Boggess measures tree growth in a managed hardwood forest at Dixon Springs.

R. E. Nelson, extension forester, demonstrates a tree planter at Dixon Springs that saves time and manpower and thus encourages continued planting.

improvement. Periodic and proper harvests have yielded more than 200 board feet per acre annually, but more importantly, the volume of desirable tree species growing in the stand today nearly doubles that when the demonstration began 25 years ago.

Nelson encouraged tree planting in southern Illinois, where almost all farms have some areas best suited for trees. He has made more than 200 on-the-farm planting demonstrations, using tractor-drawn tree planters. The demonstrations encourage farmers to continue plantings which otherwise, because of high costs, might not be done by slow, hand-planting methods.

Nelson has taught that, though the yield of forest products is a long-term project, the land supporting trees increases in value and becomes aesthetically more pleasing with each passing year, and that trees provide wildlife cover and recreational opportunities, conserve soils, and keep streams and lakes unmuddied.

Though the yields and benefits that accrue to forestry are awaited for decades, the attention needed in implementing proper forest culture is immediate and the first step in such culture is "the only way you can get there from here." Patient forestry researchers have taken the necessary steps to make unused land areas useful.

Fruits and Vegetables

In 1960, in response to the needs and urgings of the horticultural interests in southern Illinois, J. W. Courter was appointed to do small fruit and vegetable crops research and extension at Dixon Springs. Information on the performance of improved varieties was one of the most pressing needs of the industry. Following Courter's early work, old favorites, produced for years by growers, have given way to disease-resistant, adapted varieties. Courter took the best small fruits and vegetables from test plots at Dixon Springs and made demonstration plantings on the farms of commercial producers. As a result, red stele in strawberries and fusarium wilt in tomatoes have been essentially eliminated on fruit and vegetable farms in Southern Illinois.

Courter early recognized that greenhouse tomato producers of the area have some natural advantages that northern producers do not have. The relatively mild winters, longer days, and the nearness of coal as a low-cost fuel give southern growers an edge. Courter built a low-cost, plastic-covered greenhouse to test the durability of plastics as covers and to show how low-cost structures could be used to produce abundant greenhouse vegetable crops. He demonstrated the varieties

needed and the culture necessary to produce high yields of tomatoes, as much as 100 tons per acre of market-grade fruit in two crops, fall and spring.

Courter worked from the Urbana campus in 1959 before starting his work at Dixon Springs. During that year he became familiar with the fruit and vegetable growers and assayed their needs and problems as well as the potentials of the industry. At a meeting with Southern Illinois growers, he told them how they could increase their business. One grower said, "I agree in general with what you say about our potential, but you have said nothing about how we will fare with an uncertain, unreliable, and diminishing stoop-labor supply. Government regulations for housing and working conditions for migrant labor are becoming harder and harder for us to meet. Local workers won't do this stoop-labor. How, then, can we increase our fruit and vegetable production?"

Courter had no answer, but he didn't forget the question. When pick-your-own operations began as a trickle, mainly as a clean-up following the traditional commercial harvests, Courter saw the pleasure that customers took in harvesting their own food. Not only did customers benefit from the savings of picking their own, but they had an enjoyable farm outing. This was the answer — a tremendous labor force lay latent in the customer-consumer.

Courter quickly realized the potential for pick-your-own marketing of small fruits and vegetables. So that producers could be properly advised of ways to attract and satisfy customers, pick-your-own methods were used at Dixon Springs. Blueberries and thornless blackberries were tested and found to be highly favored by pick-your-own customers. Courter made nationwide studies of successful pick-your-own farms. Today he is a leading national authority on pick-your-own marketing.

But not everyone is a pick-your-own customer. Many are grow-your-own enthusiasts; they're the home gardeners. These people, too, are a part of the Dixon Springs audience. Special plantings such as minigardens are put out for this group. Courter has a special program for home gardeners and teaches the basics of gardening in local meetings all over Southern Illinois.

Hugh Livesay, Lawrence County extension adviser, said, "This horticulture, as we get into greater populations and higher food prices, is a terrific program. Not only do our people go to Dixon Springs, but we've had Courter at our county meetings the last two years. We had more people in attendance at his winter meeting than at any other meeting this year. There's a lot of interest in gardening.

"What Courter does appears in the newsletter sent to us. Every

Demonstration plantings of tomatoes in the fields of commercial producers have caused growers to change to the newer, higher-producing, disease-resistant varieties.

J. W. Courter, left standing, and G. E. Larson of the U.S. Fish and Wildlife Service tested blueberries at Dixon Springs and found them to be adapted and well liked by pick-your-own customers. Gerald Clink, right, horticultural foreman, picks thornless blackberries, also tested at Dixon Springs and found to be well liked.

Pick-your-own operations bring a million people to Illinois farms each year. They get attractive, fresh fruit and vegetables, and also gain insight into farming operations, farming problems, and farm living.

One of the fawns in the deer-movement study became orphaned and quite tame. The neck-pack on the deer contains a constantly operating radio transmitter.

week that newsletter goes in the paper on the farm page. As soon as Courter measures his results, they appear in the newsletter. It appears in the paper the next week and the people of the county have the information. It's been that quick and this has been a terrific program."

Discontinued Odd Lots

Areas of work no longer active at Dixon Springs include the turkey project, irrigation studies, deer studies, and zoonoses.

In the late thirties and early forties, several thousand turkeys were produced each year. This project was dropped because turkeys required high-concentrate feeds; they did not utilize the pastures and forages produced in the area. However, the work established that soybean meal meets the protein requirements of turkeys as well as more-complex protein-supplement formulations once thought to be necessary.

Pasture and corn irrigation experiments in the fifties answered some questions on equipment and water requirements, irrigation schedules, costs, fertility requirements with irrigation, and grazing management adjustments needed to best utilize the forage produced. The studies established that corn requires less water than pastures; 4 acre-inches of water applied in two irrigations at early tassel increased corn yields by an average of 25 bushels per acre, even more in dry years.

A deer study was done in this area so heavily populated with many kinds of wildlife. Researchers used radio tracking to learn the habits and movements of deer. Radio transmitters, each with a distinctive signal, attached to deer permitted continuous monitoring of individual deer to learn the normal range, the community and family associations, and if and by what routes translocated deer return to their former habitat.

At one time, Dixon Springs served as the field laboratory for the College of Veterinary Medicine's study of zoonoses, diseases transmissible between men and animals. This study involved the capture of animals and birds for blood and tissue sampling to determine how prevalent or serious a disease reservoir might be in a specific area or in a particular kind of animal, and to discover how diseases are transmitted from animal to animal and to man.

Powered for Progress

The administration of the Dixon Springs Experiment Station until 1957 was the responsibility of a committee of the College of Agriculture. Dean H. W. Mumford, H. P. Rusk, and W. L. Burlison were the members of the first Dixon Springs Committee. Rusk was chairman until he became dean in 1939. From then until 1957 when the Dixon Springs Committee was dissolved, W. G. Kammlade was chairman. Rusk, however, remained a member of the committee until he retired in 1952.

Kammlade fanned the flame that Rusk had lit. Under his guidance the Station continued to grow as he skillfully established policy and managed funds to add staff and facilities.

Academic resident staff at Dixon Springs increased from one in 1940 to eight by 1950. Most of this early staff had no on-campus departmental appointments, though each was trained in a particular discipline. They were Dixon Springs appointees, administratively responsible to Dixon Springs. During the formative years, this unusual nondepartmental organization had the flexibility to cooperatively accomplish the overriding objective of the Station, to learn ways to reclaim and profitably use the land and demonstrate these uses to farmers. The staff worked as a unit, with each lending his special talent and bending his effort to accomplish the common goal.

But the nondepartmental organization did not mean that Dixon Springs was not getting tireless and valuable help from staff of the several departments of both the College of Agriculture and the College of Veterinary Medicine. Without this help, progress at Dixon Springs would have been more difficult, and Southern Illinois agriculture would have benefitted far less.

As the resident staff at Dixon Springs grew and as the numbers of visitors increased greatly in the late 1940's, H. A. Cate was appointed to the Station to relieve Bob Webb of some of the tour pressure and to expedite the dissemination of information. An information program was developed with the newspapers, radio, television, and farm press.

Volumes of photo-illustrated copy have been released to tell the work of Dixon Springs as it happens. Weekly news releases go to 55 Southern Illinois newspapers, to state and national publications, and to extension advisers. Through this information channel, extension advisers are informed about current research and are quickly alerted to conditions which affect farmers in their counties.

To further increase the information flow, staff at Dixon Springs talk to thousands each year as they meet with groups away from the

Center. Special field days such as Agronomy Day, Horticultural Open House, and Beef Cattle Day attract approximately 1,500 people annually.

In 1957, when the Dixon Springs Committee was dissolved, administrative responsibility was assumed by the Superintendent who became directly responsible to the Director of the Illinois Agricultural Experiment Station. Later, all staff at Dixon Springs were given joint appointments as members of departments in the College of Agriculture.

This changed organizational plan of the Center evolved as conditions, needs, and objectives changed. The present departmental staffing at Dixon Springs encourages total departmental inputs. The annual progress report, "Update," attests that such inputs have occurred. Although the Center has 12 resident academic staff, the 68 progress reports in "Update 75" were written by 55 people from 14 departments of the College or other agencies. Eleven of the progress reports were of interdepartmental cooperative projects.

The College administration today continues the policy of creating an atmosphere which enhances the quality and breadth of the research and extension effort at Dixon Springs. Dean Orville G. Bentley and G. W. Salisbury, Director of the Illinois Agricultural Experiment Station, and J. B. Claar, Director of the Cooperative Extension Service, as well as the department heads, select resident staff at Dixon Springs who have the necessary academic training and experience to initiate and conduct high-quality research and then to effectively teach their findings to farmers.

C. J. Kaiser was appointed director of the Dixon Springs Agricultural Center in 1973 to fill the position from which R. J. Webb retired. Kaiser was at one time superintendent of the Indiana Forage Farm and later worked as a state extension specialist in forage crops in Kentucky. Kaiser coordinates activities, works with departmental groups and heads, meets with farmers and organizations, encourages staff, oversees the day-to-day operations, and manages to wedge in research projects of his own.

Kaiser keeps the principal objectives of the Center foremost in his thinking and plans. He states these objectives as:

1. To control erosion.
2. To raise the level of soil fertility.
3. To develop profitable and practical programs in crop and livestock production.

M. H. Wallace came to Dixon Springs in 1973 as an animal scientist to do sheep research. J. J. Faix, agronomist, started at the Center in 1974 to work with forage crops and the testing of plant introduc-

C. J. Kaiser, present director of the Dixon Springs Agricultural Center, addresses one of the field-day crowds attending a large-package hay-making demonstration.

tions. K. E. Redborg, entomologist, also joined the staff in 1974. Today, twelve resident academic staff work at Dixon Springs. Nonacademic staff total 42.

The University and College administration, in addition to maintaining a strong staffing policy at Dixon Springs, has appointed a lay advisory committee to help the Center to better know and meet the needs of the public. This committee was appointed in 1975 by the University of Illinois Board of Trustees upon the recommendation of Dean Bentley. Members from 29 Southern Illinois counties make up the committee (see appendix).

Administrative encouragement, strong departmental staffing, departmental cooperation, an information program, and the lay advisory committee are all powers for progress at Dixon Springs.

From the Ozarks to Appalachia

Land-grant college experiment stations of the corn belt states — Ohio, Indiana, Illinois, Iowa, and Nebraska — follow a straight and flat east to west orientation. Lessons learned at these prairie-based experiment stations do not well fit the soils and environment of southern hill farms.

It wasn't until the pressing needs of the non-corn belt area received the attention and understanding of men like Mumford, Rusk, Kammlade, and Burlison that the Dixon Springs Agricultural Center was established to meet these needs. And as Rusk predicted in his 1933 letter to Secretary of Agriculture Henry Wallace, the Dixon Springs Station did affect the agriculture of 15,000,000 acres of the southern corn belt, and it affected other land-grant universities as well. The Southern Indiana Forage Farm, now called the Southern Indiana Purdue Agricultural Center, had its origin in the example of Dixon Springs.

Maurice Heath came to Purdue in 1953 to direct activities at the Forage Farm. Heath said, "My first meaningful insight into the Dixon Springs project was when Dr. Burlison, head of the Agronomy Department, University of Illinois, talked at Iowa State University in 1940 or 1941. He talked very enthusiastically and showed colored slides of the research and developments at the Dixon Springs Station. He said that the staff at the University of Illinois College of Agriculture saw very little hope for Southern Illinois agriculture prior to the early results from Dixon Springs.

"I was intensely interested in Dr. Burlison's remarks since I was

working on the introductions of grasses and legumes and their management for improved land use on difficult soil areas. What he said about Dixon Springs results confirmed that I was in a most worthwhile work.

"Dean Reed was in charge of the Purdue College of Agriculture when the Forage Farm was started and when I arrived in Indiana. Land had been optioned and some field work had been done on the Forage Farm in 1952.

"Dean Reed had been one of the first county agents in southern Indiana. He knew first hand that the southern 40 counties were quite different soilwise and agriculturally from central Indiana. In the 1940's many county agents from southern Indiana visited Dixon Springs with farmer groups to get information and bring it home and put it to work. In the meantime, county agents and others from southern Indiana were pressing the University for a facility similar to Dixon Springs in the southern Indiana hill country. They were frustrated with research results on Class I land at Lafayette that often did not work in hill country on fragipan soils.

"Dean Reed in 1948 set in motion a study committee from the college. For three years this committee traveled extensively in southern Indiana, meeting with leaders there as well as at Dixon Springs. They recommended to Dean Reed that about 600 acres in southern Indiana hill country, representative of the problem soils, be obtained to carry out field research. The major research thrust would be forages, their establishment, production, and utilization. The utilization would be with beef, dairy, and sheep. The beef and dairy units were developed. The sheep unit was not."

Lowell Glendenning, a former county agent in southern Indiana, said that county agents of that area frequently made trips with farmers to Dixon Springs to get information that fit their agricultural situation. He said, "In the late 40's and early 50's, Dixon Springs was the catalyst that made the Indiana Forage Farm possible."

Another southern Indiana county agent, Lewis Cooper, said, "I have visited Dixon Springs many, many times. My first trip was when I was a vocational agricultural teacher and took my students to Dixon Springs for livestock judging primarily because of the sheep program there. Bob Webb arranged practice judging rings and helped us with the program. Our boys wanted to learn as much about sheep production and judging as the Illinois boys who always won the prizes at our Evansville show.

"Later, county agents from southern Indiana with farmers from their counties made trips to Dixon Springs almost annually. This was during and after World War II. We took our county Greener Pastures

committees and we always came back enthused. The wonderful work that we saw at Dixon Springs made a great contribution to our grassland programs."

Roscoe Stitt, a southern Indiana farmer, said, "I watched the news releases from Dixon Springs very closely. I was interested in the work because I was trying to do the same thing myself. I had bought marginal, even submarginal land that was deeply gullied and doubt very much that I could have put it in its present productive state without the help I got from Dixon Springs.

"The sheep work at Dixon Springs interested me most. They managed the ewe flocks so well, and they got such good returns from grazing western lambs. I went into the western lamb grazing program, running 10,000 lambs a year. I didn't keep a ewe flock, but I did buy quite a few ewe lambs, grazed them, and sold them as yearling ewes into Ohio. Yes, the impact of Dixon Springs on southwestern Indiana and on my farm has been considerable."

Clarence Kaiser, a southern Indiana grassland farmer, did a lot of experimentation on his own and developed a grassland system that attracted thousands of visitors each year to his farm. Kaiser told of his visits to Dixon Springs. "Lee Gard's work of measuring soil and water losses on different soil management and cropping systems really sold me on keeping my farm in grass. On one trip in 1946 or 1947, a group of farmers from Indiana went to Dixon Springs and stayed all day. Bob Webb was in charge. He was very enthusiastic and impressed us very much.

"Webb arranged for us to stay overnight. He took us, I believe, to a 4-H camp area for the night. That night we sat around talking and decided right then that southern Indiana could and should have a place similar to Dixon Springs. When we got home we went to work on it. We had some doubts about raising the money, but it was easy. People gave the money to buy the land for the southern Indiana Forage Farm. Yes, Dixon Springs motivated the leadership to do similar work in southern Indiana."

Farmers and businessmen of the southern 41 counties dug into their pockets and put up the money to buy 1,016 acres of land in Dubois County. Operation of the Forage Farm began in 1952.

Maurice Heath said, "During the first 10 years, thousands of people visited the project. Many groups came from southern Ohio. From several Ohio counties they returned annually. As coordinator of the Forage Farm Project, I had several phone calls from a very prominent Ohio extension agronomist. He was very concerned about the rapid expansion of tall fescue in southern Ohio. He said their Agronomy Depart-

ment didn't recommend it and thought it a mistake. He said that the southern Ohio farmers and county agents seemed to be picking up their ideas and information on tall fescue in southern Indiana at the Forage Farm."

Heath surmised that Ohio farmers were influenced by the Forage Farm in much the same way as Indiana farmers had been influenced by Dixon Springs, and that this influence led to the development of the Southeastern Ohio Center in 1966. "If this is so," said Heath, "then Dixon Springs can be called the granddaddy of the Ohio Center at Caldwell."

C. B. Boyles, Superintendent of the Eastern Ohio Resource Development Center, confirmed Heath's supposition. He said that farmers of the Appalachia region of Ohio traveled the long distance to the Indiana Forage Farm. There they learned about fescue, winter pastures, and forage establishment and utilization. The Ohio folks, the same as the Indiana folks, decided that they needed their own station. In 1965 the Ohio General Assembly appropriated $100,000 to purchase and develop the first 728 acres of the new center. Later, Union Carbide gave the University additional land, including some strip-mine spoils, to make a total of 2,300 acres. The Center was dedicated in 1966.

Boyles said, "Big-package hay systems, fescue winter pastures, and the livestock management practices of the Center are favorably influencing the farmers of the area. The sheep enterprise is going over great. Nearly every farm has a flock of at least 30 to 40 ewes. We have built a huge ram-testing barn and are in the process of establishing a bull-testing station."

Today, this center has 450 beef cows, 600 breeding ewes, 30 brood sows, 3,000 apple trees, 500 peach trees, and three acres of grapes. Last year 4,600 farmers from Ohio, Indiana, West Virginia, Kentucky, and Pennsylvania toured and inspected the research efforts of this new station.

Many hundreds of miles of hill-wrinkled lands lie between the Ohio Appalachia and the Illinois Ozarks. These hill lands offer greater promise for increased food production than the already intensively cropped flat lands of the corn belt. The hill country experiment stations, spawned by Rusk's 1933 letter to Henry Wallace, will continue to inspire and encourage farmers. Rusk, a man of vision, had a dream — a dream tenaciously nurtured to fruition at Dixon Springs.

Appendix

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IMPORTANT EVENTS AND CONTRIBUTIONS

1933 May 12. Agricultural Adjustment Act became law. This law contained provisions for land acquisition programs to retire lands from agricultural production. Under this act and other federal relief programs during the Great Depression, means for acquiring and developing an agricultural experiment station in Southern Illinois seemed possible.

1933 August 22. Professor H. P. Rusk, Department of Animal Husbandry, wrote Henry A. Wallace, U.S. Secretary of Agriculture, proposing that some of the lands and monies of the government's land acquisition program be used to develop an agricultural experiment station in Southern Illinois. Rusk's letter included a plan for using the station as a pasture demonstration center to serve farmers of 15,000,000 acres of similar land in Illinois and nearby states.

1933 October 12. E. W. Sheets, Chief of the Animal Husbandry Division of the Bureau of Animal Industry, wrote Rexford G. Tugwell, Assistant Secretary of Agriculture, that the Rusk proposal was urgently needed to show what could be done to reduce erosion on poor, rolling land, recently in cultivation.

1933 October 21. H. W. Mumford, Dean of the College of Agriculture, University of Illinois, wrote Hugh H. Bennett, Director of the U.S. Soil Conservation Service, outlining the Dixon Springs project and enlisting his support. Bennett visited Illinois and became an interested supporter. The Soil Conservation Service contributed greatly to early research at Dixon Springs.

1933 November 20. Tugwell wrote Harold Ickes, U.S. Secretary of Interior, "We [USDA] have tentatively approved the location in Southern Illinois of a correlated project for the study of soil erosion, reforestation, and livestock production into a system of farming involving greater use of pasture and forage crops." [Ickes was responsible for many of the nation-wide activities for which $3,300,000,000 had been appropriated.] The Southern Illinois location was to be designated as a "Pasture and Erosion Control Demonstration Station."

1934 A sociological survey of 138 families living in the proposed Dixon Springs Pasture and Erosion Control Project area revealed an average gross annual income of $277 per family.

1934 July 1. Memorandum of Understanding for the development and operation of the project by the U.S. Department of Agriculture and the University of Illinois was initiated.

1934 July 5. Dean H. W. Mumford signed the Memorandum of Understanding.

1934 October 4. Following the signing by representatives of a number of federal agencies, M. L. Wilson, Acting Secretary of Agriculture, signed the Memorandum of Understanding.

1934 November 13. First land for the Station was optioned from A. L. Robbs — 46.09 acres valued at $329.36.

1935 January. The Memorandum of Understanding was signed by A. C. Willard, President of the University of Illinois, and the agreement was considered to be in full force.

1935 Spring. The first test plots seeded at Dixon Springs involved grasses and legumes in fertility and adaptability studies. Seeding was on a tract known as the Brookport Land Bank Farm.

1935 Spring. The University of Illinois transferred the first animals from Urbana to Dixon Springs. They were two aged mules, used to put out crops of corn and soybeans in 1935. Corn yielded 20 bushels per acre, soybeans less than 5 bushels. Much discussion ensued as to whether soybeans would ever do as well as the familiar cowpeas.

1936 The Resettlement Administration abandoned resettlement project plans as economically infeasible. Lands acquired for resettlement purposes became a part of the Dixon Springs Experiment Station at the request of the Resettlement Administration.

1937 First steer feeding test at Dixon Springs. Steers were fed on corn damaged by the 1937 Ohio River flood. The University purchased the corn from farmers and ensiled it in a trench silo.

1938 John H. Longwell was appointed the first superintendent of the Station under the administration of the College of Agriculture.

1938 October 8. Dixon Springs Experiment Station dedication — Dean J. C. Blair accepted the responsibility for the administration of this new unit of the Illinois Agricultural Experiment Station.

1939 H. P. Rusk appointed dean of the College of Agriculture. With this appointment, Rusk relinquished the chairmanship of the Dixon Springs committee, but remained a member. Rusk appointed W. G. Kammlade chairman of the committee. W. L. Burlison, Department of Agronomy, was the third member of the committee.

1940 R. J. Webb was appointed superintendent of the Dixon Springs Experiment Station.

1948 Record animal gain produced on pasture — a two-acre fescue-Ladino clover pasture produced 682 pounds of cattle and sheep gain per acre. The record still stands.

1949 Soil Conservation Service discontinued research at Dixon Springs. The University of Illinois assumed and continued this research at Dixon Springs.

1950 The end of a decade during which resident academic staff increased from one in 1940 to eight by 1950.

1950 October. The first cooperative feeder calf sale in the state was held at Dixon Springs. This sale, sponsored by the Egyptian Livestock Association, has been held each year since.

1955 Pelleted hay fed to steer calves at Dixon Springs produced average daily gains of 1.73 pounds, three times the gain of steers fed baled or chopped hay. A unit of pelleted hay produced twice as much steer gain as a unit of unpelleted hay.

1957 Committee administration of the Dixon Springs Experiment Station was dissolved and responsibility was assumed by the resident superintendent responsible to the director of the Illinois Agricultural Experiment Station.

1958 First cooperative wool pool at Dixon Springs. Sales have been held each year since.

1962 May 9. First zero-till corn tests planted at Dixon Springs — four half-acre plots on Smith Tract (Field 241).

1967 First zero-till double cropping with soybeans in wheat stubble.

1973 C. J. Kaiser appointed director of the Dixon Springs Agricultural Center.

1973 Nearly 18,000 bushels of corn produced on the Dixon Springs Agricultural Center, corn in excess of Dixon Springs needs, was trucked to Urbana for livestock feeding tests there. In 1933, Rusk's Plan of Operations proposed "that calves produced at Dixon Springs be shipped to Urbana to be finished for market because not enough corn grew at Dixon Springs for that purpose."

1974 Test plots of zero-till corn planted in cornstalks at Dixon Springs yielded an average of 202 bushels per acre.

1975 Lay advisory committee to the Dixon Springs Agricultural Center was appointed by the University of Illinois Board of Trustees.

LAND PURCHASES FOR THE PROJECT

TRACT NO.	OWNERS	ACRES	AMOUNT
6	James Wells	196.8	$ 2,100.00
19	Helen Black	120.0	1,460.00
31 and 200	Clara M. Phelps	172.0	3,650.00
32	Charles Phelps	136.0	2,200.00
33	Ida Weaber	72.0	720.00
34a	T. O. Phelps	160.0	3,200.00
35	Charles Oscar Phelps	120.0	2,900.00
39	Frank Taylor	159.0	1,272.00
41	Carrie Maynor	73.0	660.00
42	A. L. Chester	86.0	1,385.00
48	O. B. Trammel	87.5	780.00
56	D. B. Wideman	221.9	3,825.00
64	India Bradley	100.0	1,800.00
67	George B. Lauderdale	280.0	9,000.00
68	Edgar Morse	178.0	2,750.00
69	Charles G. Bennett	70.0	2,504.00
76a	Brookport National Bank	80.0	600.00
85	E. F. Wright	60.0	300.00
87	James F. Wright	90.0	882.00
88	Oliver N. Bynum	80.0	640.00
92	Henry E. Boaz	371.2	6,500.00
100	W. R. Wheelis	89.62	1,900.00
110	Alonzo Brush	80.0	600.00
114	Ivus Sistler	140.0	800.00
116	J. M. Groves	151.0	1,300.00
129	Lewis Austin	130.5	1,140.00
138	A. L. Robbs	160.0	1,150.00
139	Holland Collie	120.0	1,750.00
141	William Jackson	40.0	100.00
143	Kenneth Phelps	91.75	1,000.00
144	T. A. Lauderdale	13.9	100.00
146	Mrs. John Fisher	127.0	1,200.00
150	J. L. Chism	160.0	1,800.00
152	Katie Buster	40.0	360.00
153	Cullum Bros.	40.0	120.00
158	Ida Weaber	180.0	2,000.00
158a	Ida Weaber	64.0	640.00
160	Federal Land Bank	206.63	2,292.50

TRACT NO.	OWNERS	ACRES	AMOUNT
171	India Hazel	50.0	400.00
173	Elbert Elam	220.0	2,200.00
175a	Eva Hardin	40.0	300.00
175b	Sylvia Davis	20.0	160.00
175c	Floyce Kerley	60.0	740.00
177	H. R. Bullock	80.0	800.00
180	Clarence Moors	60.0	630.00
181	G. W. McKee	50.0	300.00
182	Thomas F. Phelps	160.0	2,267.00
182a	Thomas F. Phelps	83.0	877.20
182b	Thomas F. Phelps	60.0	426.65
183	Farm Mortgage Holding Co.	239.0	1,965.00
184	George Robinson	44.9	325.00
185	A. L. Robbs	46.6	325.00
191	Lottie Austin	35.0	385.00
193	James Sistler	151.9	1,128.00
195	Theo. Cullum	130.0	1,000.00
198	Wesley Kilpatrick	100.0	1,250.00
203	Roy Wise	171.0	2,266.00
204	A. W. Wagner	80.0	450.00
206	Mary E. Broadway	20.0	150.00
207	Lewis Wells	111.6	1,000.00
207a	Lewis Wells	84.5	900.00
208	Charles B. Wheeler	452.96	4,200.00
210	Suzan Whiteside Story	149.75	1,500.00
214	Egyptian Finance Co.	40.0	226.50
216	A. L. Robbs	158.0	1,300.00
302	Trustees First State Bank of Simpson	128.0	1,300.00
304	Virgil Smith	135.0	3,100.00
308	J. Ado Whiteside	280.0	5,000.00
310	Julia Stevens	24.0	300.00
311	Fred Harper	80.0	952.00
312	J. F. Hardin	80.0	1,800.00
316	John F. King	30.0	250.00
317	Lilly B. Tooley	80.0	1,000.00
318	Grover Story	30.0	250.00
319	Frank Whiteside	30.0	250.00
R	Illinois Rural Rehabilitation Corporation	1,314.96	$ 29,432.89
Total (93 tracts)		9,861.0	$138,486.74

AGRICULTURAL EXPERIMENT STATION RESEARCH PROJECTS AT THE DIXON SPRINGS AGRICULTURAL CENTER

10-314. Nitrogen as an environmental quality factor; determining and modeling the various steps of the N cycle. W. D. Lembke, J. K. Mitchell, Joseph Simon.

10-365. Mechanization of lamb and ewe feeding. H. B. Puckett, E. F. Olver, F. C. Hinds.

10-375. Animal waste management with pollution control; animal waste management systems. D. L. Day.

12-318. Insect pest management systems for the alfalfa ecosystems. E. J. Armbrust, W. G. Ruesink.

12-363. The biology of insects attacking black walnut. J. E. Appleby.

INHS. Insects of ornamental plants. J. E. Appleby.

15-311. Corn and crops testing. D. W. Graffis.

15-326. Establishing forage species for high yields. D. W. Graffis.

15-338. Forage crop variety trials. D. W. Graffis.

15-342. Improving quality and seasonal distribution of forages in southern Illinois. J. J. Faix, C. J. Kaiser, G. E. McKibben.

15-370. Single-crop and double-crop no-tillage grain production systems. G. E. McKibben, E. L. Knake, L. E. Gard, J. C. Siemens, D. E. Millis, L. L. Getz.

15-397. Agronomic-economic investigations of fertilizer use. L. F. Welch, J. T. Scott, L. V. Boone, G. E. McKibben, D. L. Mulvaney, M. G. Oldham.

20-309. Test for identifying highly fertile animals. P. J. Dziuk.

20-310. Genetics of litter size in beef cattle. H. W. Norton, A. L. Neumann.

20-340R. Efficiency of lamb production. U. S. Garrigus, J. M. Lewis, F. C. Hinds (NC-111).

20-351. Ecological studies relating to intensified ruminant production. U. S. Garrigus, E. E. Hatfield, F. C. Hinds, W. W. Albert, B. B. Doane, J. M. Lewis, G. F. Cmarik, L. A. Arehart, Jr.

20-355. Comparison of intensive and extensive management systems for beef cows and their offspring. A. L. Neumann, G. F. Cmarik, H. W. Norton.

20-382. Cardiovascular responses of domestic animals to hot environments. D. C. Harrison, F. C. Hinds.

55-321. Select lepidopterous insects attacking honey locust and oak in the Midwest. J. E. Appleby.

55-323. The effects of recreation on forested soils and vegetation in Illinois. R. A. Young.

55-343. Ecological dynamics and pine management in southern Illinois. G. L. Rolfe, L. E. Arnold, F. A. Bazzaz.

55-344. Water quality from forested watersheds in southern Illinois. L. E. Arnold, G. L. Rolfe.

55-345. Disposal of liquid waste from a cattle feedlot on a forested watershed. G. L. Rolfe, L. E. Arnold.

65-301. Growing tomatoes in plastic greenhouses. J. W. Courter.

65-344. Agricultural plastic greenhouses. J. W. Courter.

68-370. Isolation, purification and characterization of viruses of herbaceous and ornamental plants. G. M. Milbrath.

70-302. Control of multi serotypes of leptospirosis in cattle and swine with a polyvalent bacterin. L. E. Hanson, A. H. Killinger, M. E. Mansfield, D. N. Tripathy.

70-315. Ecology, epidemiology and control of bovine keratoconjunctivitis (pinkeye). A. H. Killinger, L. C. Helper, M. E. Mansfield, H. E. Rhoades.

70-320. Development and economic evaluation of preventive medicine programs. J. W. Judy, L. E. Hanson, S. E. Curtis.

70-335. Immunological factors associated with haemonchiasis in lambs. M. E. Mansfield, N. D. Levine.

70-336. Differential diagnosis of respiratory disease of swine involving Mycoplasma species. G. T. Woods, M. E. Mansfield, J. Simon.

70-365. Parasitic diseases of cattle in Illinois. P. R. Fitzgerald, M. E. Mansfield.

70-371. Swine respiratory disease (influenza). G. T. Woods, H. E. Rhoades, M. E. Mansfield.

70-338. Diagnosis, prevention, and control of acute respiratory diseases in cattle. G. T. Woods, R. A. Crandell, J. W. Judy, M. E. Mansfield (NC-107).

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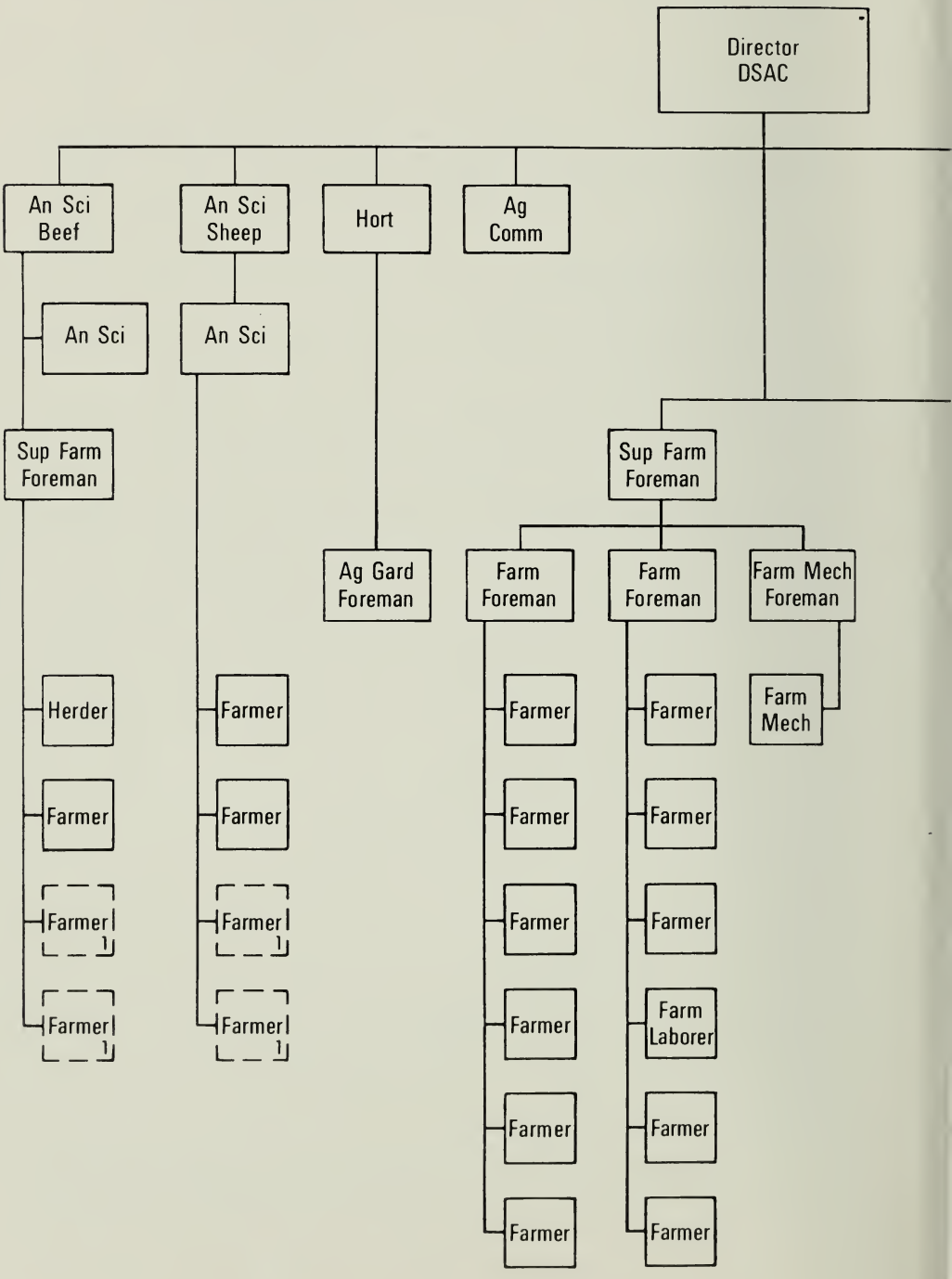
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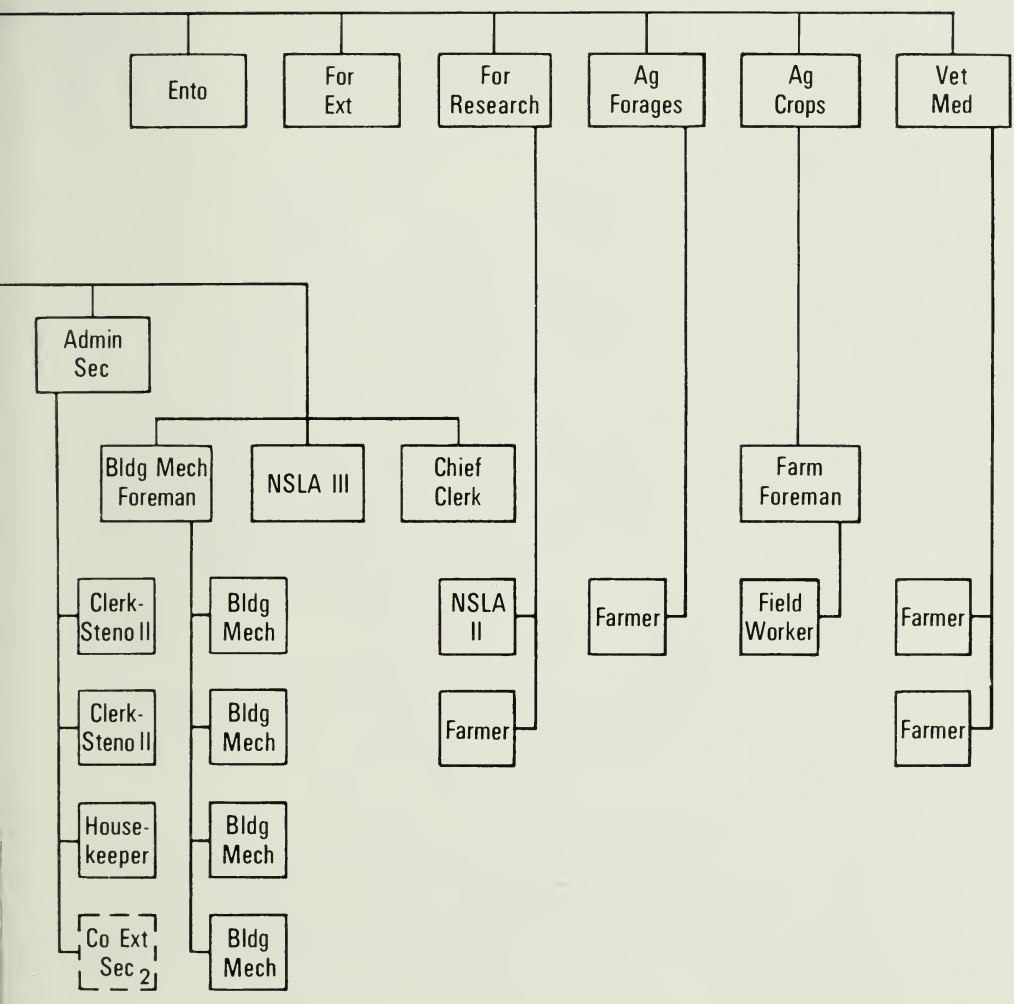
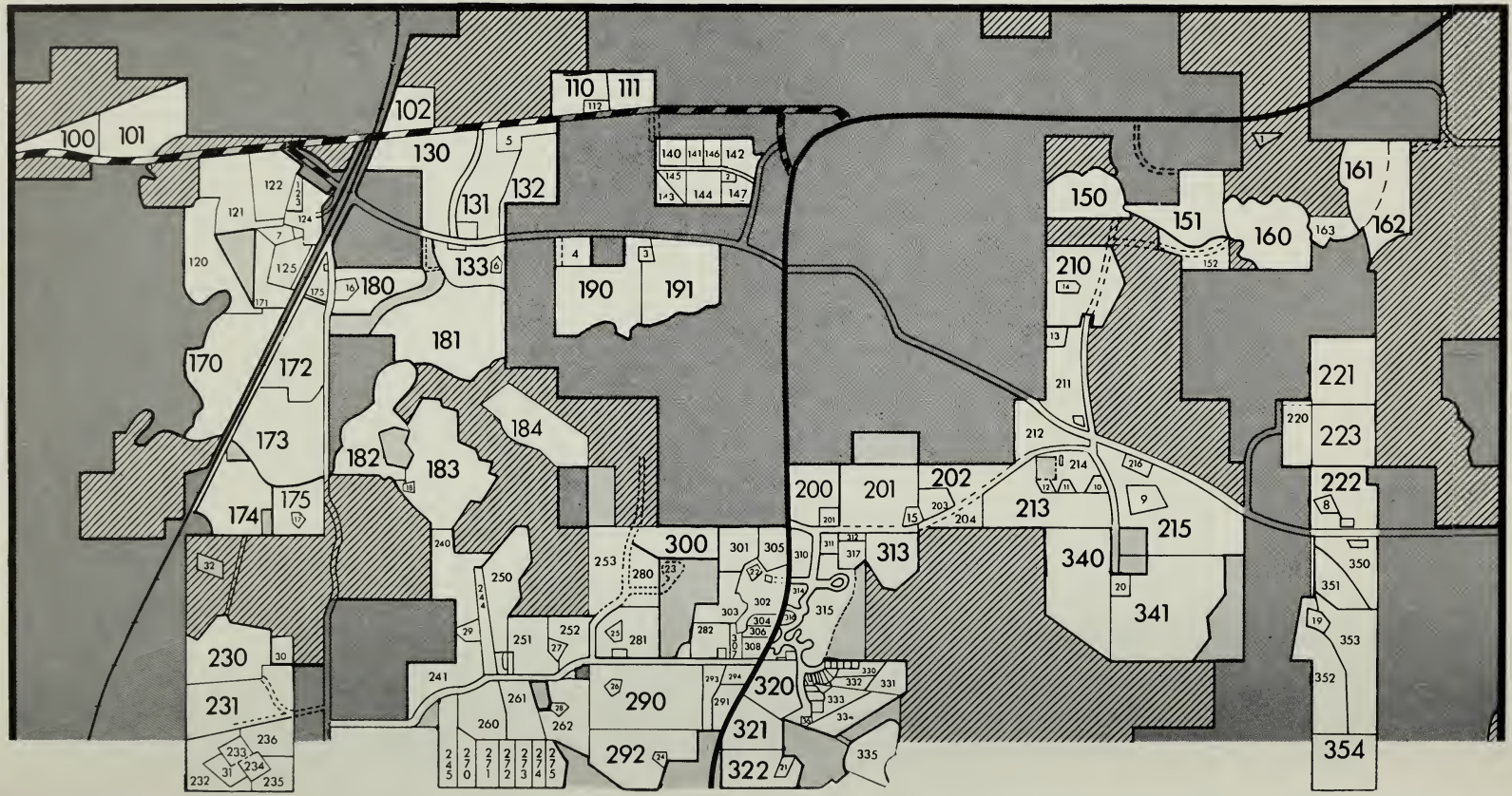
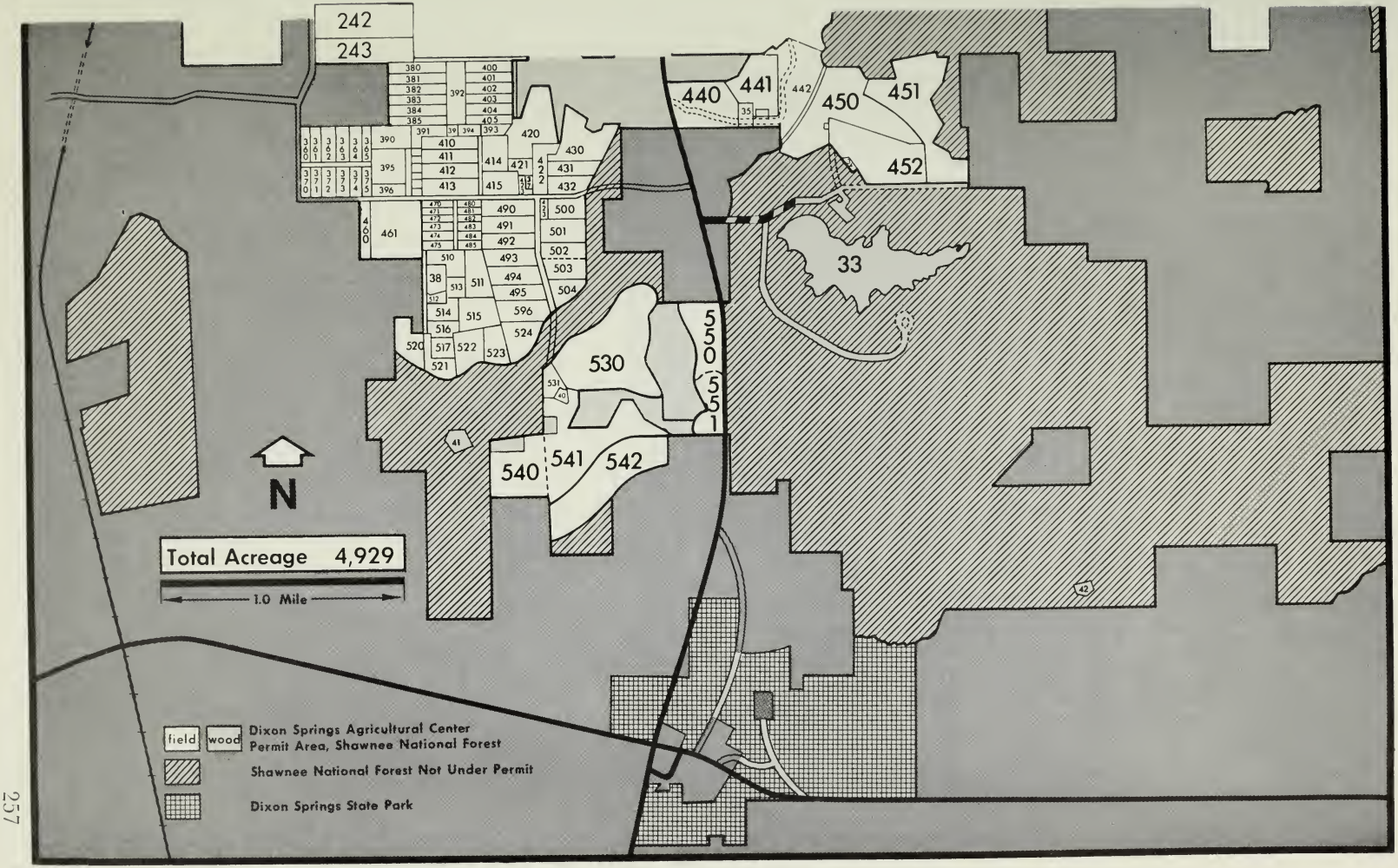


[1] Summer period in Research and Demonstration Operation
[2] Pope and Hardin Counties

University of Illinois
Dixon Springs Agricultural Center

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Total Acreage 4,929
1.0 Mile
field
wood
Dixon Springs Agricultural Center
Permit Area, Shawnee National Forest
Shawnee National Forest Not Under Permit
Dixon Springs State Park

Administration Building at Dixon Springs in the early 1960's.

Some Recipes Using Sassafras and Persimmons

FILET (SASSAFRAS FOR GUMBO)

Air-dry several tender green sassafras leaves (spring is best time to gather them). Crush to make a powder to add to soups.

(The sassafras is highly mucilaginous, and a quantity of the powdered leaves can be added to soup from a salt shaker to provide a substantive and wholesome addition. It is this powder which forms the famous "gumbo filet" of the South.)

CHICKEN GUMBO

Cut 1 medium hen as for frying. Brown slowly in its own fat. Do not flour chicken. Cover with water and cook slowly until tender.

Make a paste of 2 tablespoons fat and 4 tablespoons flour and add to chicken. Add 1 package frozen sliced okra (or 1 can), 1 can tomatoes, 1 medium size onion, salt and pepper to taste. Let simmer until flavors are blended. Add 1 tablespoon filet just before serving.

Cook long-grain rice separately and serve gumbo over rice.

SPRING TONIC

Sassafras tea is used to "tone up" the blood in the spring. Twigs, roots, or root bark is used for tea. Dried leaves are used to thicken soups.

For tea, gather in the spring when bark "slips" or peels easily. Boil roots and limbs and sweeten to taste or boil one cup of shredded bark in one quart of water for 10 minutes. Strain. Sweeten to taste.

PERSIMMON PUDDING

2 cups persimmon pulp
2 cups sugar
2 eggs
1½ cups flour
2 teaspoons baking powder
½ teaspoon salt
1 cup buttermilk
1 teaspoon soda
1 cup cream or evaporated milk
½ cup melted butter or margarine
Dash of cinnamon
1 teaspoon vanilla

Beat eggs, sugar, and pulp together. Measure dry ingredients — salt, flour, and baking powder. Dissolve soda in buttermilk. Stir the dry ingredients into the first mixture alternately with the buttermilk and cream. Add cinnamon and vanilla. Melt butter in 9 x 13 pan. Then add to batter. (This will grease your pan.) Bake at 325 degrees about 1 hour. Serve with whipped cream or ice cream.

PERSIMMON PIE

1 cup persimmon pulp
1 teaspoon cinnamon
¼ teaspoon salt
¼ teaspoon cloves
2 eggs
2 cups milk
1 cup granulated sugar
1 tablespoon melted butter
Pastry for 1 crust

Mix all ingredients thoroughly and pour into unbaked pie shell. Bake 10 minutes at 450 degrees; reduce heat to 350 degrees. Bake 40 to 45 minutes more or until done.

NO BAKE PERSIMMON PUDDING

1½ cups persimmon pulp
½ cup sugar
1 pound miniature marshmallows
1 pound crushed graham crackers
1 cup coffee cream
½ cup nuts
½ cup grated coconut

Mix pulp, sugar, crushed crackers, marshmallows, cream, nuts, and coconut together. Put in butter mold or spring-form pan. Let set in refrigerator until ready to eat. Unmold and serve with whipped cream.

SWEET POTATO-PERSIMMON PUDDING

2 cups flour (fork-stir to aerate before measuring)
½ teaspoon baking soda
½ teaspoon salt
1 teaspoon cinnamon
1 teaspoon nutmeg
2 cups persimmon pulp
3 eggs
1½ cups loosely packed coarsely grated sweet potato
1 cup loosely packed fresh grated or canned flaked coconut
¾ cup granulated sugar
¾ cup firmly packed light brown sugar
3 tablespoons butter or margarine, melted

In a large mixing bowl, beat together until blended the persimmon pulp, eggs, sugars, and butter. Mix flour, baking soda, salt, cinnamon, and nutmeg. Add flour mixture and milk to the first mixture and beat until blended. Stir in sweet potato and coconut. Turn into a buttered oblong glass baking dish (about 13 x 9 x 2 inches) or similar utensil. Bake in a preheated oven at 325 degrees until a knife inserted in center comes out clean — about 1 hour. Serve warm (or reheat) with or without whipped cream.

PERSIMMON COOKIES

½ cup butter
1½ cups brown sugar
1 large or 2 small eggs
1½ cups persimmon pulp (unsweetened)
2 cups unsifted flour
1 teaspoon baking soda
½ teaspoon salt
½ teaspoon cinnamon
⅛ teaspoon cloves
1 cup chopped walnuts

Cream butter and sugar; beat in the egg. Mix in persimmon pulp. Sift flour, soda, salt, and spices. Stir in persimmon mixture and blend in nuts. Place by teaspoon on greased cookie sheets — about an inch apart. Bake at 350 degrees for 10 to 15 minutes until lightly browned. Watch carefully; they burn on the bottom. Top with a walnut or pecan half, if you wish. Makes 3 to 4 dozen.

PERSIMMON ICE CREAM

6 eggs
2 cups sugar
3 tablespoons vanilla
Whole milk to fill freezer ⅔ full
Dash salt
1 can evaporated milk
1½ cups persimmon pulp

Beat eggs and sugar together. Add other ingredients and mix well. Freeze.

QUICK ICE CREAM PIE

½ cup persimmon pulp
1 quart vanilla ice cream

Mix persimmon pulp and vanilla ice cream. Pour into pastry or crumb crust and freeze. Garnish with nuts.

PERSIMMON CANDY

2 cups sugar
½ cup corn syrup
½ cup water
2 egg whites
1 teaspoon vanilla
⅔ cup persimmon pulp

Place sugar, syrup, and water in saucepan. Stir while they dissolve over heat. Then, let mixture boil without stirring to the light crack stage, 265 degrees on candy thermometer. While this is cooking, beat egg whites until stiff. Pour syrup mixture over egg whites, beating constantly. Beat until creamy. Add vanilla and persimmon pulp. Nuts may be added if desired. Pour into buttered tins.

PERSIMMON MEDICINE

1 handful inner tree bark
1 pint water
Sugar to taste
1 small lump alum

Place together and boil down to half-pint. Add some sugar and a small lump of alum. Used in remedy for thrush (a sore mouth of children). Bark can also be chewed for sore throat.

(From *Legends and Lore of Southern Illinois*)

PERSIMMON BEER

1 bushel persimmons
1 barrel
25 gallons water
1 cup yeast (kitchen)
Sorghum (optional)

Place persimmons in open barrel and crush in just enough water to make a thick mushy mixture. Add clear water to mixture to make about 25 gallons. Sorghum may be added but not necessary. Add yeast and stir thoroughly. Place in warm place to ferment and skim as conditions indicate. When mixture ceases to "work" (from 3 days to 3 weeks), drain off liquid beer and store in cool place in jugs and jars. Use well-ripened sweet persimmons.

(From *Legends and Lore of Southern Illinois*)

PERSIMMON WHEAT BREAD

¼ cup warm water
2 packages yeast
2 tablespoons honey or molasses
2 cups persimmon pulp
2 teaspoons salt
2 cups white flour
whole wheat flour

Mix warm water, yeast, and honey or molasses. Set aside until double. Add persimmon pulp, salt, and white flour. Stir 100 strokes. Add wheat flour until dough no longer sticks to fingers. Knead 10 minutes. Let rise until double. Punch down. Shape into loaves. Let loaves rise. Bake at 400 degrees for 20 minutes. Finish baking at 350 degrees for a total of 45 to 55 minutes.

(From *Outdoor Illinois*)

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